

# Expanding Radio

Ecological Thinking and Trans-scalar Encounters  
in Contemporary Radio Art Practice

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## Abstract

This thesis is an exploration of some of the discourses arising out of the current ecological crises (Haraway 2016; Horton 2017) and argues that radio art is a constructive method for opening out practices of listening, for helping move beyond anthropocentric dialogues, and simultaneously beyond the constraints of dominant modes of storytelling.

Ecological Thinking (Code 2006) and concepts of Planetary Time (Dimock 2003) are a useful framework from which to view contemporary radio art practices because they accentuate long and complex networks of interconnectivity, not only within nature, but, more recently, between living beings, technology and the environment. By identifying the interconnectedness of radio and transmission, and the possibility for immersion not only in the content but the process of the medium itself, it is hoped that recognition will be given to the necessity to think ecologically (holistically) in order to create sustainable symbioses between humans, technology and the living and ‘non-living’ entities of the planet.

I begin by providing an outline of anthropocene discourses intertwined with radio and radio art practice. Then I describe and contextualize the radio art work *chorus duet for radio* (Donovan 2016), positioning it as an example of a collective, trans-scalar listening encounter. I move on to posit radio as a valuable medium from which to critique and disrupt masculinised and westernised (radio) histories, and as an outlet for feminist, queer, and speculative re-tellings of the past. History is viewed here in the same way as electromagnetic radiation: as matter to be untangled. Finally I use the garden radio art project *Datscha Radio*<sup>17</sup> (Schaffner 2017) to give an overview of how radio can be implemented in an expanded way to examine many of the interconnected themes of this thesis: the anthropocene, radio art, ecology, human and more-than-human networks, listening, speculative storytelling, and disruption.

This thesis is an exploration of how expanded views of radio, as a natural phenomenon and a technological and artistic medium, can be used as means of resistance in times of great change.

## Introduction

Radio is currently at a significant juncture as major broadcasting co-operations transition from analogue to digital platforms, and there is a concurrent shift from live, collective listening, to fragmented listen-on-demand media (Hall 2015). Partly due to these shifts, radio is re-establishing itself as a medium for artistic practice: 2016 saw *Radio Revolten*, the first International Radio Art Festival, in Halle (Saale) and last year's *Documenta 14* festival was accompanied by 24/7 radio broadcasting for the first time. Despite radio art's (re)emergent and often marginalised position within the art/sound art landscape, it inherently works to expand perceptions not only of the capabilities of broadcast radio as an artistic medium, but also the ubiquitous natural phenomenon of electromagnetic radiation that radio stems from. Expanding this perception of radio further, the trans-scalar networks that are intrinsically at play within natural networks of electromagnetic radiation as well as the constructed networks of radio art, come to the fore.

Some of the current discourses surrounding the anthropocene are useful because they necessitate an expanded perspective of humanity's position within the space and time of the planet (and beyond). This thesis argues that the productive outcomes of anthropocene discourses, which I understand to be the recognition of multispecies interconnectivity, are a useful lens from which to view radio art. By perceiving radio art in this way, notions of interconnectivity are deepened and strengthened and the necessity to move beyond anthropocentrism and universalism becomes startlingly apparent.

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My position as a radio artist will become evident throughout this text, but one aspect that is only mentioned briefly, is that of my *elements* radio show (2016- ). This show is the embodiment of research into sounds, texts and sound/radio art practices, which think in a self-reflexive manner about radio as elemental media. Many of the thoughts, discussions, tones and frequencies generated from and around these shows have found another form within the writings of this text.

Another aspect of my practice, which is not mentioned in the body of this text but is hopefully mirrored in my choices of source material, is my position as a radio facilitator. During the past few years I have worked as an editor and coordinator for the community/free radio group CoLaboRadio in Berlin, with the explicit intention of feminizing and queering the content that is transmitted. In this thesis, when I write about gender, it is often in a regrettably binary manner. At the same time, when I write ‘woman,’ ‘women’ or ‘female’, I intend it to mean the broader (expanded) definition of what that can entail: any female identifying persons.

This text includes some speculative aspects, which I am aware does not generally fit into traditional frameworks of academic production. For me it is a way of allowing for, or actively making space for, the interruption of and interference with conventional narratives and methods of knowledge production. In the same vein, I reference pirate radio, free radio and radio art as fields that explicitly interfere with the (usually raced, classed and gendered) mainstream narratives of broadcast/commercial radio. I also experiment with layout, typography and narrative structure in this text in order to express an expanded version of my ideas.

**Chapter One** begins by opening out perspectives on space, time and radio. It goes on to provide an overview of anthropocene discourses, radio in/of the anthropocene and radio art practice. It requires what might be termed ‘active reading’, alongside a healthy dose of imagination. For this chapter I would like you to keep in mind the oscillatory nature of radio transmission (including moments of interference) at a meta level, whilst at the same time allowing for the literary embodiment of the act of tuning a radio that I have attempted here. I have experimented with layout as a guide. I ask you to imagine tuning/skipping back and forth between a number of radio transmissions (subject matter or perspectives), allowing for momentary disruptions, and sometimes finding a fruitful equilibrium of thought in allowing multiple transmissions to air at the same time. Consider it an exercise in speculative composition (for both reader and writer).

In **Chapter Two** you will be transported to a specific moment in radio space; I attempt to articulate a possible listening experience through language. This chapter is an overview and contextualisation of the radio art piece *chorus duet for radio* (Donovan 2016), positioning it as an example of a collective, trans-scalar listening encounter. The thinking around the making of this piece was a pre-cursor to many of the concerns of this text; in this way, my work in this thesis can be considered as practice-led.

**Chapter Three** brings together the idea that both history and electromagnetic radiation are matter to be untangled, and potentially pirated. The first documented radio listening experience (re-told by Kahn in 2013) is questioned, followed by an interruption in the form of a real conversation (about a [speculative](#) legend) that I had with my then 6 year old daughter, Molly, in Winter 2017. The chapter continues to explicitly intertwine real and [imagined](#) narratives, positing that listening, pirating and imagining are acts which pay respect to the intricacies of networks at play in knowledge production and creative practices. Radio is advocated as a valuable medium from which to critique and disrupt masculinised and westernised (radio) histories, and as an outlet for feminist, queer, and speculative re-tellings of the past.

In **Chapter Four**, I adopt a more traditional academic essay format to give an overview and contextualisation of the garden radio art project *Datscha Radio*<sup>17</sup> (Schaffner 2017). I detail how radio can be implemented in an expanded way to bring together many of the interconnected themes of this thesis: the anthropocene, radio art, ecology, human and more-than-human networks, listening, speculative storytelling, and disruption.

My **Concluding remarks** provide a summary of the thesis, along with a reflection on the possibilities for future research.

## Chapter One

### An Oscillatory Exploration of radio (art) in/of the anthropocene

What, then, is listening?

You have decided to listen attentively. You turn on the radio. It spits out a waiting, crackling sound. A voice, for example, comes through to you as though imprisoned in the box: it is a prisoner's song. The song, yes, but not the prisoner – that which elsewhere one would call a 'partial object.' And yet it seems so close – you are neighbors – and perhaps you would like to believe that it is to you alone that one is speaking. But you know well there is no face-to-face. That word passes over the shoulder, as though launched by a distracted discus thrower. It's a game of profiles, like that of the silhouettes in a shadow theatre. The rustling sound that comes to you is but a faint, hazy trace, the residue of another celebration, an absent celebration that has already taken place (even though it is felt to be synchronous). You are not, then, behind closed doors, in police quarters. Allow yourself to be cast, like a yo-yo, upon the sound's trajectory, between the faraway source and the impact of the sound resounding in your ear. This is not a linear track. The sound does not project like an arrow. It radiates, it explodes. And in fact, you already are in an imaginary space, at the heart of a dreamy, utopian activity. Through what you hear, let yourself drift upon an unstable raft, surrendering to shifts in space and time, to plural presences, a multiplicity of 'listening points'. (Farabet 2001: 55)

There can be an intimacy to radio-making; this is what I attempt in my *elements* radio show. I speak quietly. I speak quietly about the vastness of elements and try to intertwine long, fine threads. Although radio is considered to be a one-to-many medium, I imagine a solitary listener (even those listening together, are also listening alone). I try to whisper in their ear over electromagnetic radio waves.

Radio is unique in its ability to weave the smallness of intimacy, and the largeness of electromagnetic frequencies together; it reaches people in a personal way whilst simultaneously referencing all radiating matter.

It connects, on multiple levels: individually, collectively, cosmologically.



Wai Chee Dimock helped to open my perspective – or perhaps to provide tools for the articulation of an already existent perspective; hers was the opening of a perspective on literature, which I found to be particularly fruitful when also applied to radio. To exemplify this comparison, and as a form of opening, here is another oscillatory exploration; this time an oscillation between Dimock’s text and Norman Corwin’s radio play *Seems Radio is Here to Stay*:

**Words are not pointlike. They spread out, spill out into unexpected historical periods, unexpected human communities: the bidirectional flow of time is such as to fill any given text with recesses of antecedence and stretches of afterlife. These recursive and projective horizons will never gel with the chronology and territory of a single jurisdiction. The slow tempo of literature means that its elongated story will be told by continents, by millennia. (Dimock 2003: 492)**

**This microphone is not an ordinary instrument  
For it looks out on vistas wide indeed:  
My voice commingles now  
with northern lights and asteroids and Alexander’s skeleton,  
With dead volcanoes and with donkey’s ears,  
It swims with minnows and it’s in the Sphinx’s jaw.  
It drifts among whatever spirits pass across the night.  
Here is a thought to fasten your throat:  
Who knows who may be listening? And where? (Corwin 1993: 139)**

Planetary Time / Cosmological Space  
Global Translation / Ethereal Transmission

Oscillating Between  
Wai-chee Dimock & Norman Corwin

In 2003, Wai-chee Dimock published her paper ‘Planetary Time and Global Translation: “Context” in Literary Studies,’ which calls into question the usual ‘unspecified’ unit of analysis in literary studies, arguing that it “requires the largest possible scale, that its appropriate context or unit of analysis is nothing less than the full length and width of our human history and habitat” (489).

In 1939, Norman Corwin's radio play *Seems Radio Is Here To Stay* was broadcast to commemorate 25 years of broadcast radio.

Corwin's play uses radio to self-reflexively discuss the medium itself. Although Corwin mentions the relative newness of radio, his unit of analysis is not the mere 25 years of its 'existence,' but the length and breadth of time and space – the eternal nature – of *natural* radio's existence.<sup>1</sup>

Dimock states that such an extension of scale is usually given to the sphere of space, hence the term 'globalization' is normally utilised in spatial terms. "I have called it 'planetary time' in order to signal temporal length joined with spatial width" (491-2). By lengthening not only the amount of space, but also time at play, ideas of the nation-state can appear arbitrary. Planetary time allows us to think of time and space before and beyond the existence national boundaries, deeming such markations extraneous.

The play was broadcast just a few months before the outbreak of the 2<sup>nd</sup> World War. Since its inception, radio had been used to communicate the declaration of war or peace. Corwin's mention of borderlines within the context of an extended unit of analysis – that of radio's larger existence – also calls into question and trivialises such boundaries. Within this larger context, Corwin seems to argue for the necessity to transmit messages of man's achievements – his "majesty" and "nobility" (139) – not simply his aptitude for war and destruction.<sup>2</sup>

In order to look back, as well as forward in time, with what Dimock terms a "bidirectional arrow" (505), she turns to Braudel's theory of the *longue durée* – the

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<sup>1</sup> ELF (extremely low frequencies) are radio waves that can penetrate sea water, earth and rock - lightning strikes and solar flares make electrons in the atmosphere oscillate, causing ELF. The timescale for growth for the largest radio galaxies is of the order of tens to hundreds of millions of years.

<sup>2</sup> I think Corwin is referring to 'human' achievements, yet his language deems us all masculine.

slowing down and elongation of time – arguing that literature is a key player, as a slow-moving and expansive entity with agency that will continue to morph and unfold into the future.<sup>3</sup>

Corwin addresses the listener directly, the *you*, and tries to imagine from where *you* might be listening. Through this there is a great sense of presence, and of many simultaneously united *listening* human presences all over the world.

Dimock references Harrison's use of the term 'lexification' to describe this process.<sup>4</sup> Here, the chronology of (western) history and time is dismissed altogether, with rather an acceptance of the intermingling of pasts and futures, "transforming human finitude into a field of historical relations rather than a flow of chronological moments" (492n12).

Radio is the common thread:

"The miracle, worn ordinary now, of just such business as this  
Between your ears and us, and oceanides of ether" (142).

Yet, Corwin refers to radio as the collective 'we.'

*You*, as a listener, are included in the *we*.

Dimock turns to Thoreau as an example, who uses the imagery of mingling waters – from Walden and the Ganges – to articulate influences spanning centuries and continents. Thoreau looks to the ancient *Bhahavad Gita* to inform his ruminations on war and action. Thoreau's personal story of the death of his brother is used to illustrate both the fragility and the strength of the boundaries within a person (body and 'soul') and between persons. Here, death is seen as a connector, as fertile. Dimock terms such a connection 'translation.' "Translation achieves its

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<sup>3</sup> "The full articulation of the already-said within the folds of the not-yet-said cannot be traced except on the largest possible scale" (Dimock 2003: 492).

<sup>4</sup> which is very much akin to Dipesh Chakrabarty's description of "History 2" in his 2000 book *Provincializing Europe: Postcolonial Thought and Historical Difference*.

broadest scope in this sense: as a bond uniting the living, the dead, and the unborn, a continuum across space and time as well as across languages”(505).

Corwin oscillates, between the individual and the communal; between the ‘manmade’ broadcast technology and the marvel of natural radio; between the present-on-earth and sometime-in-the-ether; between the living and the dead.

(The first sound affect listed in the play is that of two oscillators.)

Walt Whitman is brought back from the dead by being called to the microphone, to share some insight into the wonder of man and nature. And the even-longer-since dead Beethoven is addressed directly in his grave – for:

“Indeed, the ground has ears!

Perhaps, for all we know,

This is telephony with buried listeners.

If all a planet’s denseness

Cannot stop our whisperings,

Will then mere coffin walls?”(140-141).

Dimock’s is a fresh and seemingly necessary reading of ‘context,’ time and space, which literally seems to be a call to view the bigger picture. However, such a view must be taken with care. One may miss the wood (the Native American land of Thoreau’s *Walden*) for the trees (his frame of intellectual/ philosophical influence). Looking on a planetary scale, the local may be ignored. The solution seems to be to oscillate. Dimock frames planetary time in a western dominated way and her choice of what to oscillate between can be critiqued: her examples are male and either North American or of colonised countries.

(My own oscillations may also be critiqued..)

Corwin’s radio play is outstanding for its acknowledgement of the wider spectrum of radio in relation to its human use. However, he falls into a similar trap of oscillating between clichés. While the *we* of collective radio is fairly gender balanced, humankind in general is masculinised; a pity to go against the grain of creating a larger frame only to depict a narrow view. Corwin also draws

only upon male, white, western literary sources. Despite utilising a unit of analysis that extends before and beyond human imagination, he still reinforces unimaginative and restricted literary canons.

Can radio be seen (like Dimock's literature) as an entity with agency? Can transmission be seen (like Dimock's translation) to unite the living, the dead and the unborn? Within a large scale, are the particularities of close-reading dismissed? By looking so far forwards and backwards, do we risk an apathy for the present, or does it make our actions more meaningful? Does all this oscillation make you delirious?

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As this interruption shows, radio as a medium has a very different significance when considered in a deep-time context, rather than purely as a simple technological means of communication. Deep-time radio stretches before (and beyond) humanity to a space and time that is very difficult to comprehend; it goes further, beyond Dimock's planetary, to the cosmological. Such a removed perspective can be invaluable, yet daunting, and in this case, as Dimock states, oscillation is a useful tool. It allows the possibility to recognise similarities and disparities on different scales. This can be productive in terms of self-reflexivity and in recognising a position within a larger frame of reference.

This mode of thinking and reflecting, however, is not without potential hindrances; it is necessary to pay attention to what Zach Horton terms "scalar collapse" (2017: 36). Scalar collapse is the comparing of disparate scales, or scalar encounters, from which the outcome may be the loss of any sense of the spectrum of scales in between the scales in comparison. It is also the subordination of one scale to the logic of another, which Horton roots in Enlightenment tradition, in colonial and instrumental-rationalist logics (36). He also warns of the loss of "our critical capacities in the face of that which is so immense (the planet, climate, deep time)" (38-39). With such a removed perspective also comes the risk of creating a universalising overview, and comparing micro and macro scales may indeed lead to

an over-simplification of the connection between two things. Horton gives two examples of this: the atom & the solar system, and Gaia & an organism.

I will add my own example, too: Schumann resonances (global electromagnetic resonances between the earth's surface and the ionosphere) and Alpha waves (neural oscillations), which are both at a similar frequency.

“In a fundamental way, collapsing scale in our technology and thought diminishes our understanding of and ability to fully encounter the world that we inhabit” (36).

Horton suggests the “trans-scalar” (37) as a means to overcome the limitations of comparing disparate scales on a linear track. The trans-scalar is at once multidirectional and respects notions of differentiation garnered through comparison. The scales within this framing are subject to perpetual change, requiring constant recalibration as they have the capacity to (or simply do?) affect each other regardless of comparative size: “As conjoined articulations, movement at one scale can influence movement at other scales. This efficacious influence is bidirectional: smaller structures can influence larger structures, just as the latter can influence the former. Scale literally animates the universe” (43).

**Radio is good because its metaphysical principle is like the radiations that sustain all life in the universe itself** (Foreman/Donovan 2015: 7).

Taking heed of the trans-scalar perspective, the human is then positioned impartially in a complex network of scales, which at once levels the human with its ‘nonhuman’ counterparts, whilst simultaneously revealing a diversity of scales within this network (or multitude of connected networks), which ranges from the bacterial to the societal, the cosmological to the vegetal, the technological to the molecular.

Thinking of radiation within this framework opens up and connects a whole array of networks of transmission: the spectrum of electromagnetic frequencies

ranges from the ionising radiation<sup>5</sup> of Gamma rays, X-rays and Extreme ultra-violet, to visible radiation (light), microwaves, and radio waves. Within the radio spectrum, there are naturally occurring radio waves caused by lightning, astronomical objects and solar flares, and artificially generated (technological) radio waves that are used for two-way communication, broadcasting, television, radar and navigational techniques, communications devices such as mobile phones and wireless networks, and ‘smart’ technology. And even within the radio broadcast spectrum (3 kHz to 300 GHz), there are many methods and modes of transmission: FM, AM, long wave, short wave. Perhaps the most poetic is Skywave, or skip, in which (usually) short waves are propagated around the earth by being transmitted up to the ionosphere and reflecting back:<sup>6</sup>

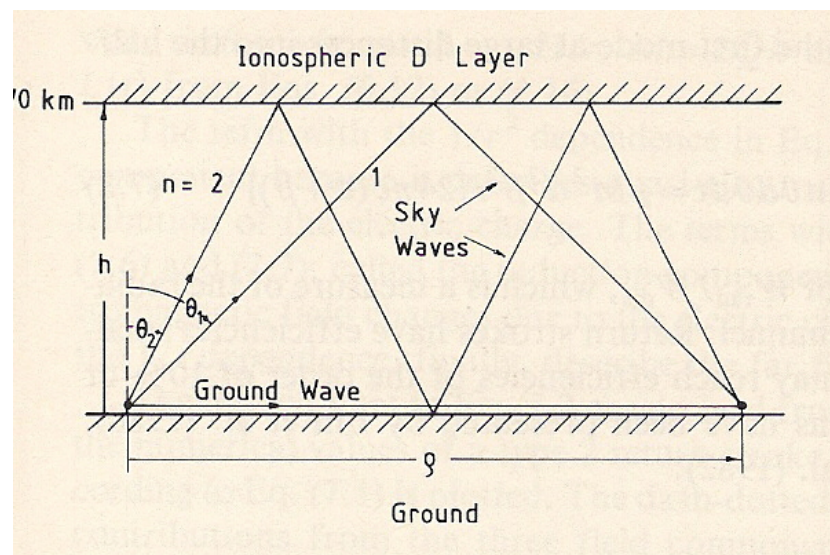


Fig.1.1: Sky and Ground Wave

<sup>5</sup> Ionising radiation can cause electrons to split from atoms or molecules and can have detrimental effects on humans, and indeed all living organisms and some viruses, through DNA damage.

<sup>6</sup> Radio propagation within the ionosphere depends upon frequency, angle of incidence, time of day, season, the earth's magnetic field, and solar activity.

For an excellent ‘sonopoetic exploration of space, sound and radio’ which discusses media space and the specific moments, in alignment with the movement of the earth and sun, which allow for listening to short wave radio, see Udo Noll’s *Surfing the Gray Line* (2015).

So far, my descriptions mainly allude to space and size (distances between points of transmission and reception), but I also want to open out scale in terms of time, or rather pace. In these multifaceted networks, transmission may occur at a rock's pace, or the time it takes the light from a distant star to reach the earth. It can also take place at the speed of a firing synapse, or from a field of great velocity, such as the contemporary worlds of mobile and wireless communication platforms.<sup>7</sup> I argue that these fields, despite their disparities, are connected at multiple, changing points: a star can interfere with a mobile phone conversation. We can look at any scale and find a (shifting, connecting) network of transmission – biological, technological, and/or hybrid forms. Viewing encounters with these networks as trans-scalar means allowing for a flux of connections to happen simultaneously. Trans-scalar encounters allow for an awareness of connected, multiple points; this can take place in terms of transmission and reception, and also in terms of knowledge production about, or experiences of, pasts, presents, futures. Under the light of the trans-scalar, all of this can become slippery, malleable and new.

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The anthropocene<sup>8</sup> is the suggested name for our current geological epoch, initially claimed by (atmospheric chemist) Paul Crutzen & (biologist/ecologist) Eugene Stoermer in 2000 – although Stoermer had been using the term since the 1980s (Haraway 2016: 44) – as a recognition of the impact that human activity has had on the Earth. Questions of scale are integral to these discourses, as Horton states: “The ‘Anthropocene’ is commonly understood to signify a crisis of scale, bringing

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<sup>7</sup> The BBC have recently programmed the series *Slow Radio*, as an “antidote to today’s frenzied world” (2017), which features field recordings meditatively edited together with idle chitchat from specific locations; it is the antithesis of the typical highly-edited, fast pace of most commercial radio (though it still sits well within a documentary framework and is not quite slow enough for my taste).

<sup>8</sup> I will continue to write ‘anthropocene’ without a capital letter as a way of acknowledging that it is not (yet) a formal term for the current epoch, that “the naming practice is an anomaly in the stratigraphic nomenclature: until now, ecological divisions were named after the main flora and fauna composition, not after any causal agent” (Bonneuil 2015: 19), and that this naming does not necessarily provide solid foundations for strategising the current ecological crisis.



into focus the temporal, spatial, and causal extent of the human. In this sense, the Anthropocene is less about the discovery of new scales than it is a form of self-reflexive knowledge: it marks humanity's confrontation with itself as a trans-scalar entity" (Horton 2017: 35).

The concept of, and the term, 'anthropocene' has a good many critics.<sup>9</sup> A worthy argument against its use is the inherent homogenisation of all humans into one responsible entity: "humanity [is placed] in the driving seat of the planet's ecology, first as the unwitting inflictor of 'stresses,' and then, ever so swiftly, as the deliberate and self-assured inflictor of corrective management technique" (37). This is problematic not only in that it assumes a collective accountability for the current, immense ecological crisis (indeed, the 6<sup>th</sup> great extinction), but it also implies a standardised experience of the repercussions.<sup>10</sup>

And yet, who is this responsible 'Anthropos'? A universalised, masculinised, human? Human exceptionalism is seen when this Anthropos is placed at the centre of the (usually disastrous) outcomes of the anthropocene; the main concern is human survival. Value is only placed on the survival of nonhuman species if it works to maintain human survival. A crucial question here, for thinking ecologically and empathetically, is also who and what is denied agency by the singling out of the Anthropos? Haraway's criticism of the Anthropocentrism involved in this movement is articulated by the importance she places on the interconnectivity of many species, of thinking-*with* other beings: "Companion species are relentlessly becoming-with. The category companion species helps me refuse human exceptionalism without invoking posthumanism" (Haraway 2016 :13).

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<sup>9</sup> See Haraway's section "the anthropocene" for a succinct critique of its many issues (2016: 44-47).

<sup>10</sup> See Gabrielle Hecht *Interscalar Vehicles for an African Anthropocene: On Waste, Temporality, and Violence*, 2018.

...everything gives off signals. Cell phones, Wi-Fi, satellite dishes, and radio towers all pump out signals connecting privileged people around the world. The world is a global village, but only to a select few. We are the lucky ones. Communication is taped to our fingertips, wrapped around our ears, and tied to our tongues. Communication artists are fascinated by sending and receiving signals and noise. We are seduced by high-frequency chatter and low-frequency hum. Sometimes our bodies travel alongside the radio waves, but even when our bodies are still, we continue to vibrate with internal messages zooming along neurons and dendrites. Communication keeps us alive.

Everything gives off signals. Scientists have discovered that the queen bee gives off at least nine pheromones that help direct behaviour in the hive. Evolution in technology means that new frequencies of complex whale song can be recorded and recognized. Life constantly whirs and hums in surges and ebbs. To live is to transmit. (Weidenhammer 2007)

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T.J Demos, a critic on visual culture and the intrinsic politics therein, criticises the anthropocene for how it “frequently acts as a mechanism of universalization, albeit complexly mediated and distributed among various agents, which enables the military-state-corporate apparatus to disavow responsibility for the differentiated impacts of climate change, effectively obscuring the accountability behind the mounting eco-catastrophe and inadvertently making us all complicit in its destructive project” (2017: 19). Some argue that much of the damage done to the planet is actually caused by capitalism – the Capitalocene is used as a term to encompass this (see Haraway 2016: 47-51). Media theorist Jussi Parikka describes the sickening layer of plastic, electro- and techno-waste that has come to rest on the crust of the Earth within the last 100 years or so as the “Anthrobscene” (2015) – a cutting comment not only on the geological layer created by humanity, but also of the Anthropocentric discourse surrounding it. Indigenous anthropologists Davis and Todd also critique the anthropocene as a universalising project, but are more explicit in the agenda of this outcome as a perpetuation of colonialism: “By linking the Anthropocene with colonization, it draws attention to the violence at its core, and calls for the consideration of Indigenous philosophies and processes of

Indigenous self-governance as a necessary political corrective, alongside the self-determination of other communities and societies violently impacted by the white-supremacist, colonial, and capitalist logics instantiated in the origins of the Anthropocene” (2017: 763).

**The usual narrative also says it is the content, it is the signal that is most important. But we know from astronomy, that if you’re looking for new planets, you don’t always see the planet itself, you see the effect that a planet has on the background and that’s how you locate it. So *Radio Revolten* is investigating the space around a signal. The electrical fields of influence around the signal. And in this social or cultural term, it means the space around the art, the space around where things happen. So if we say ‘what is radio art?’ the question is actually ‘what does radio art do?’ (Friz 2016)**

Despite the many (valid) criticisms of the anthropocene, it has leached its way into the humanities, sciences and arts – and even into mainstream media.<sup>11</sup> However, this infiltration has a number of positive effects; it has engaged people and fields of study and discourse in a way that climate change and sustainability have not. It can be seen as interference, or a necessary interruption. It has taken the realisation that the planet is undergoing an ecological crisis to make humans take a step back and see how their actions have impacted and continue to impact many species, biodiversity and ecosystems of the Earth, at a multitude of scales. The anthropocene is a form of articulating this realisation. This ‘anthropocene-interruption’ has some interesting consequences: new realisations of scale (before and beyond human existence) and new realisations of (multi/inter -species) interconnectivity. It forces consideration beyond humanity, to the materiality of the earth, waters and airs that we share with many living and ‘non-living’ beings. But perhaps the most important effect of anthropocene discourse is the acknowledgement of the planet, and all things on it, as changing, responsive elements with agency unto themselves.

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<sup>11</sup> Haraway notes a political agenda to this, and advises us to “notice that the Anthropocene obtained purchase in popular and scientific discourse in the context of ubiquitous urgent efforts to find ways of talking about, theorizing, modelling, and managing a Big Thing called Globablization” (2016: 43).

With these effects in mind, how can we then consider transmission in/of the anthropocene? Can we think of electromagnetic radiation as an element with agency? Does thinking in this way allow for the realisation of trans-scalar interconnectivity, trans-scalar agency?

**Yet at least for a moment in time, it seemed to my ears and nerves that analog radio offered a medium whose narrative flows seemed beautifully resonant with the firestorms of human neurology and the nuances of our own consciousness, so full of its own interference, resistance, pops, ruptures, slips and sudden, pure clarity.**  
(Whitehead 2011)

Radio has an interesting connection with the anthropocene. There are two streams of radioactivity: one is a ‘natural phenomena’ with its own inherent agency, and the other is a human, technological invention.<sup>12</sup> There is an interesting relationship between the two, of friction, oscillation and interruption. The radioactive elements that spread across the planet from nuclear weapons testing in 1945 are seen by some to mark the beginning of this potentially new epoch (Demos 2017: 9n4).<sup>13</sup> Of course there are organic forms of radioactivity, but these “radio fossils” (Dyer & Engelmann 2017)<sup>14</sup> of the nuclear age are indeed remnants of human activity, and they will still be there to tell humanity’s tale for millennia to come.<sup>15</sup> These nuclear fossils have been banished to the earth; the stronger they are – the longer their radioactivity takes to dissipate – the deeper they are buried.

The starting point of the anthropocene has, and is still being, fiercely debated – one cannot commit to a new epoch without pertaining to a starting

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<sup>12</sup> Durham Peters points out human mimicry of natural phenomena: “cetacean echolocation is millions of years older than the military-industrial innovation of sonar”(2015: 111); so too can broadcast radio be seen to mimic natural radio.

<sup>13</sup> For others it is the beginning of agriculture, the industrial revolution, or the invention of plastics.

<sup>14</sup> See this online article for an artistic overview of this concept, including audio samples: <http://temporaryartreview.com/lore-of-the-radio-fossil/>

<sup>15</sup> “Fossil-burning human beings seem intent on making as many new fossils as possible, as fast as possible” (Haraway 2016 :46).

point.<sup>16</sup> Some look further back than nuclear weapons testing and place the onset of the anthropocene at the beginning of the Industrial Age, of which early wireless means of communication – telegraph, telephone, radio – certainly played a part.

In the same way that the desire to conquer or overcome distance through technology was at the heart of early radio and wireless technology, perhaps current anthropocene discourse is an attempt to overcome, or intellectually come to terms with, humanity's place within a larger framework of time. In the same vein, Daniela Silvestrin notes how the "Wireless Age can thus be regarded as equally profound and irreversible to our societies as the geological ones defining the Anthropocene to our planet – while also being part of the latter" (2016 :29).

We live, breathe and interact in a soup of waves,<sup>17</sup> a super-highway of information riding on waves, which we both rely upon and contribute to at the same time. This is the place of mobile phone networks and Wi-Fi internet, Bluetooth, microwaves, remote controls and cordless telephones. This is the ubiquitous place of 'smart' technology. This is the unseen spectrum that humans contribute to on a gigantic and ever-growing scale, at an ever-growing density. It is still such a new field, that we do not yet know the effects of such frequencies on human health, and the ecosystems that they permeate.<sup>18</sup> We cannot see these waves,<sup>19</sup> mostly we cannot

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<sup>16</sup> See Davis and Todd for an excellent argument on linking the onset of the anthropocene with the colonization of North America (2016).

<sup>17</sup> The first documented radio listening experience was only possible because the sound of natural radio was not drowned out by the sound of electro-smog, in this case in the form of the electrical power and telegraph lines which were beginning to be installed at that time (Kahn 2013).

For an interview and performance with sound artist Klaas Hübner, who works with amplified sounds of electro-smog generated by the everyday objects that surround us, listen to "elements: electro smog & a i r. with klaas hübner".

<sup>18</sup> The long-term effects of EM radiation exposure is unknown. Humans are now so entwined with this technology that it is easy to turn a blind eye to its potential detrimental effects, and indeed it would be very difficult for society to turn back to a pre-Wireless Age. Research into the health implications of these technologies is also highly controversial because any negative results could prove detrimental to telecommunications industries, which are comparable with fossil fuel industries in terms of revenue.

feel them,<sup>20</sup> and we cannot hear them<sup>21</sup> but the energy created by them can be made audible, or perhaps rather ‘translated’ into sound frequencies, through certain technology. This practice is an example of science and art coming together and overlapping. Both fields use these techniques to better understand the nature of the frequencies which are above or below the range of human hearing, and the various networks and scales to which they belong. But what happens when these profuse frequencies are made audible? Does this change the perception of the frequencies generated by humanity?

If attention is paid to the artificial radiation that humans are creating, the realization of its entanglements with the natural phenomena of radio must also be enabled; attention goes beyond the strong signals of anthropogenic radiation, and the intersections and forces of radio’s influence on many scales is revealed. By the same token, thinking at the peripheries of the anthropocene means to critically assess some of its dominant discourses in order to be able to move beyond them; to notice multispecies entanglements, to notice simultaneously larger *and* smaller framings of time and space, and to notice trans-scalar interconnectivity.

Paying attention like this is to listen, to listen at multiple levels, thereby paying respect by *noticing* the quieter signals,<sup>22</sup> to which natural (more-than-human) radio certainly belongs. By *listening*, I mean perceiving in an open way, or as Anna Friz articulates: “shining the light of your attention [...] onto the world around you, as a curious organism” (2006). It is about giving respect by paying

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<sup>19</sup> Though perhaps we can see their effects: I notice that my peace lily has never flowered again in the eight or so years since it’s been living next to the Wi-Fi router...

<sup>20</sup> Except for those with EHS (electromagnetic hypersensitivity).

<sup>21</sup> Human hearing ranges from 20 Hz – 20 kHz; the radio spectrum is 20 kHz – 300 GHz.

<sup>22</sup> Sound artist Hildegard Westerkamp writes of paying attention to immediate sound environments – to noise in particular – in order to realise how humans (mostly inadvertently) contribute to it; she describes this as an act of environmental activism (1994: 88). Making electromagnetic frequencies audible falls into the same logic.

attention. Renowned composer Pauline Oliveros also makes the distinction between hearing and listening; she invented the practice of *Deep Listening*:<sup>23</sup>

*Deep Listening* for me is learning to expand the perception of sounds to include the whole space/time continuum of sound – encountering the vastness and complexities as much as possible. Simultaneously one ought to be able to target a sound or sequence of sounds as a focus within the space/time continuum and to perceive the detail or trajectory of the sound or sequence of sounds. Such focus should always return to, or be within the whole of the space/time continuum (context). Such expansion means that one is connected to the whole of the environment and beyond. *Deep Listening* is a practice that is intended to heighten and expand consciousness of sound in as many dimensions of awareness and attentional dynamics as humanly possible.” (2005 :3)

It has been argued that in order to experience sound art, one must take on a particular kind of focused listening, which is inherently different from conventional modes of listening (Louth-Robbins 2010). At a time when western culture privileges the spectacle and the speech, it is important to consider the cultural and performative act of listening. Listening can be seen, in itself, as an act of resistance, when privileged ears choose to listen to the less privileged, for example.<sup>24 25</sup>

Laura Wetherington connotes deep listening with measured, deliberate attention to text, especially ‘Lyric Cryptography’, which involves listening to the text being read, or imagining the sound of the text. “Studying dense language is an

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<sup>23</sup> I find the term *Deep Time* to be problematic in its allusion to historical linearity; I understand it to be as Prue Gibson describes: “Deep time is the geological record of how the earth has changed. The deeper we dig, the longer the story” (2016). But with the same understanding as Oliveros, “*Deep* has to do with complexity and boundaries or edges beyond ordinary or habitual understandings” (2005), the meaning is opened out and becomes a much more constructive and malleable term.

<sup>24</sup> On the practice of radical, caring listening, see Valerie Palmer-Mehta’s “Theorizing Listening as a Tool for Social Change: Andrea Dworkin’s discourses on listening” (2016).

<sup>25</sup> See Chapter Three for more on listening, radio and resistance, especially in terms of gender.

act of political resistance, particularly in a moment when misinformation, doublespeak, and fake news abound. The slow, deep attention that this manner of reading demands can help us to decode what's going on in the world around us" (2017). Luce Irigaray has written on intimate, aware and ethical listening (1996: 115-121); Andra McCartney on "open, alert, lucid listening" (2016: 40); and the work of researcher Ximena Alarcón Díaz deals with bodily listening, unification and the processing memories – especially those connected to migration – through listening (2017). As well as these perspectives, I also understand listening to be a gesture of making space. Listening ecologically, within the anthropocene, means giving our awareness to, and making space for, multispecies networks. I argue that radio art is a self-reflexive way to accomplish this.

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The anthropocene, or the anthrobscene, is an articulation of how humans have and continue to make marks on and around the planet. Electromagnetic radiation is the unquestioned material of our time, the tobacco smoke of the previous century: too entangled in capitalism and addiction to be genuinely questioned. Daniela Silvestrin terms our current age the "Wireless Age" (2016: 25).<sup>26</sup> Here we make unseen, electromagnetic marks – abundantly: "the density of artificial manmade radiation on Earth has grown to  $10^{18}$  higher than what we would be surrounded by naturally. Man has not changed any other living environment in such a monumental way" (30).

Artists make marks too.

Artists working with wireless technologies could easily be accused of adding to the electromagnetic soup. Of course there is a contradiction involved in using a

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<sup>26</sup> "Epochs are divided into ages, and ours is being considered the Information Age, or Digital Age. The Industrial Age, which brought about the technologies, societal and economic changes determining the preconditions for the Anthropocene Epoch, ended with the Digital Revolution – the computerization and digitalization of the economy, and the implementation of the World Wide Web as a new tool for communication, networking and sharing information as well as the development of new services and business strategies." (Silvestrin 2016: 25)



problematic medium to problematise the use of that very same medium. However, small-scale, fragile transmissions, for example, are able to comment on and draw attention to radiation whilst only adding an electromagnetic drop into the soupy ocean. Works utilizing pre-existing networks do not create extra radiation by utilizing what is already there, but can challenge the accepted use of transmission technologies by using them.

During current ecological crises, an overhaul in human thinking and doing, on many levels, is essential. Artistic practice is a valuable means to explore and express this, “to start discussing and analysing electromagnetism as a lived phenomenon of embeddedness, including and combining all the layers and spheres that are related to and constitute it” (34).

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Despite the relative long teeth of broadcast radio’s existence within the history communication technologies, Radio art is still an emerging field<sup>27</sup> and therefore is not easily definable. Anna Friz positioned radio art as an inquisitive medium which *listens* (2016), as the outcome of experiments which involve listening as part of artistic practice: “listening in a different register, listening for something that might be missing” (2016). In radio art, the medium of electromagnetic radiation is used to explore and share acts of listening within trans-scalar networks.<sup>28</sup>

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<sup>27</sup> We see radio art gaining some attention in the past few years, seen in the *Radio Revolten* festival in Halle (Saale) in 2006 and 2016, the Radia network (established in 2002), and recently in the study programme *Experimentelles Radio* at the Bauhaus University in Weimar.

<sup>28</sup> “That’s why I have always been uncomfortable with any notion of radio art that focuses too exclusively on the sounding, or the sending out, because so much of the play takes place in the space of listening, within the consciousness of the listener, who can never be named or measured. The sound doesn’t matter when the play is the thing, and for the wireless imagination, the play is everything. Qualities of indeterminacy and ambiguity make analog broadcast the ideal medium for philosophical drift and free association.” (Whitehead 2011:2-3)

The Anthropocene, as disciplined knowledge practice, *simply is* a kind of self-reflexive mapping of the cosmos as a set of linear scales, with the Earth as their reference point and the human as their perspectival anchor and guarantor. Thus Crutzen’s technoscientific cosmic view is itself a universal overview, arising from the same logistics of scalar collapse that have obscured the multi-scalar nature of ecology from the beginning. (Horton 2017: 38)

Seen from an ecological, trans-scalar perspective – and here I mean ecological in the sense of its taking part in a multitude of networks, whilst being concerned with, and giving respect to, other elements, beings and modes within these networks – radio art can be seen to work against many of the problems associated with the anthropocene, to resist the stronghold of its discourse, to provide tools for thinking *around* these particularly pressing issues.

Bringing many elements of radio art and the anthropocene together, is to think about many things simultaneously, with according respect. I think of Haraway’s string figures (and of course the tentacular thinking of her Chthulucene<sup>29</sup>), and the image she uses to articulate multispecies entanglements (though I would like to add rocks and plastic and – somehow visually – electromagnetic frequencies to this image):

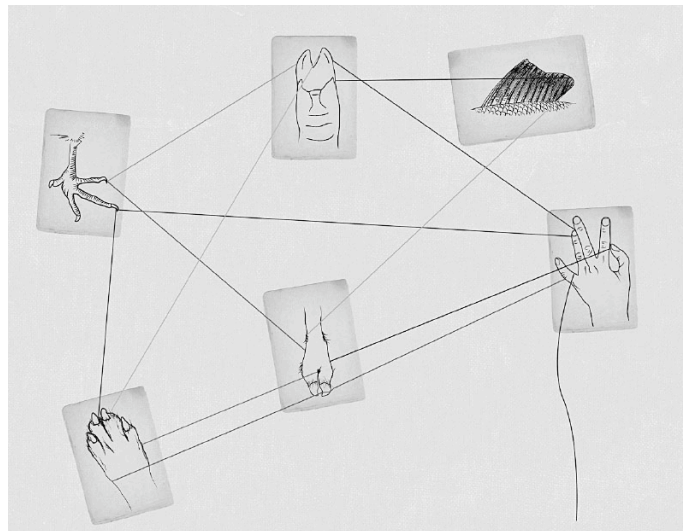


Fig.1.2: *Multispecies Cat's Cradle*. Drawing by Nasser Mufti, 2011

<sup>29</sup> “Unlike the dominant dramas of Anthropocene and Capitalocene discourse, human beings are not the only important actors in the Chthulucene, with all other beings able simply to react. The order is reknitted: human beings are with and of the earth, and the biotic and abiotic powers of this earth are the main story.” (2016: 55)

In this chapter I have shown how expanded notions of time and space (a necessary effect of anthropocene discourses) are enlightening when applied to radio. In my overview of the anthropocene, I have emphasised some of the problematic issues and posited radio art as a constructive framework from which to highlight these issues whilst simultaneously emphasising its more positive outcomes, such as the recognition of multispecies interconnectivity and agency beyond the human. To touch on many interconnected, yet disparate people/places/things at once is to mimic the trans-scalar encounters that humans touch, and are touched by, constantly. This is the framing within which I want to set radio art practice, as a device which disrupts dominant narratives and promotes listening as a tool for necessary change.

## Chapter Two

### chorus duet for radio

On a warm, May evening in 2016, a sprawling group gathers in the front yard of AUSLAND, an established project space in Berlin. After some time, a smaller group within the group forms its own constellation and begins to sing together, drawing the rest of the group closer to it; the dynamic shifts as realisations of audience and performers are formed. As the song(s) come to an end, the singers lead the group downstairs into the venue itself. Down concrete steps, holding open a heavy, sound-proof door for one another, past the reception desk (no money would exchange hands here), and through another heavy door.

Inside it's dark and cool;

such a contrast to the early-summer evening outside.

A muffled, slightly unmelodic tune plays quietly as a loop.

People talk in whispers, if at all.

The space is lit sparingly, from underneath, accentuating the high ceiling.

When the eyes adjust, they find cushions placed around the floor, and radios.

The radios encircle the space: this is where the sound is coming from.

In the middle of the room, against a wall, there is an antenna, shaped like the skeleton of an inside-out umbrella, raised on an extended pole.

People move into the space and begin to settle.

When the door closes and the movement in the room is sparse, the loop fades out and the light fades down to near darkness.

Now from the radios a new sound begins to resound in the space.

Gently, it becomes more audible.

It sounds like radio, radio static.

It undulates.

But *is* that radio static? Or the sound of ocean waves?

If you listen attentively, this undulation, which, with time, sounds more and more like the sea, fills the background,  
and another layer becomes apparent.

There is movement closer to the microphone (closer to the radio).

Some tiny clicks and bumps, so very subtle.

Some tiny squeaks.

All the while, the waves continue on.

The rhythm of these waves is quite quick (are they from a lake perhaps?) yet constant.

In the right frame of mind, you could let these waves carry you away.

But a few little squeaks and a distinct buzzing bring you back to the microphone (back to the radio). A voice explains:

*This is the sound of a hummingbird.*

The buzzes and squeaks – the hummingbird – circle the microphone, and so, in turn, the radios.

*This little hummingbird has recently returned north.*

Waves crash.

It sounds like subtle human hubbub undulating in and out, too.

*She's working on building a nest.*

*It's about the size of a walnut and made of bud scales, and is attached to a tree limb with spider silk.*

*It will stretch to contain the growing nestlings.*

The waves continue...

*A few weeks ago, she took an immense journey to get here – some 18 hours straight, over the Gulf of Mexico.*

We hear her wings, the waves,

and the little sounds that remind us of the layers...

*In the balmy South, she fattened up, flew close to the water – skimmed the waves – and took advantage of favourable winds.*

*She flew alone.*

Those buzzing wings!

*And she has always flown alone.*

*And she has always followed the exact same route as her ancestors, without ever being shown.*

*Of course, this could lead us to wonder about hereditary memory and about navigational techniques.*

The waves fade out; they're quite quickly replaced with sounds of a very different quality. At first the high squeaks of the hummingbird are almost mimicked – electronically? – and slowly another kind of undulation becomes apparent.

A deeper, slower undulation.

*This is the sound of naturally occurring electromagnetic radio waves emitted from the earth's magnetosphere.*

The chirping sounds become more diverse.

A kind of whistling sound is introduced.

*These sounds are known as 'chorus', or even 'dawn chorus', as they occur more often, or are easier to capture, in the early morning.*

*Lower morning air temperatures and less active air currents may permit a dawn chorus song to travel further without as much interference.*

These sounds have a distinct electronic sense to them, but also seem organic.<sup>1</sup>  
They begin to fade out, whilst the sound of wind simultaneously fades in.

*The earth radiates.*

*On a geological timescale, the earth's magnetic field is very stable;  
on a spatial scale, it is also highly predictable...  
the perfect tool for migration.*

*Hummingbirds are guided by the sun, the moon, the stars;  
the sights, the sounds, the scents along their route.  
But they are also internally aware  
of the complex pattern of magnetic variation.*

*Hummingbirds have trace amounts of magnetite in their brains  
– the same material of the ancient lodestones that humans used  
to guide their journeys.*

Another layer of sound can gradually be heard...

*Many migrating birds have a magnetite crystal located in their  
upper beak for magnetoreception,  
and it can be found in a diverse range of organisms  
from fish to turtles, molluscs to bacteria.  
Magnetite in the human brain is theorised to affect long-term  
memory.*

...this new layer of sound comes to the forefront in a powerful rush.

Another kind of undulation, we hear the force of waves rushing in on, and pulling  
back across, rocks and pebbles.

*Magnetite can be found in large quantities in beach sand; rivers  
carry it to the beach from erosion, where it becomes  
concentrated via wave action and currents.*

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<sup>1</sup> Do these sounds – high and low tones dancing together – remind us of our internal bodily listening experience? Of the high pitch of the nervous system, and the low hum of blood flow? (There are many things to think about, and places to go, whilst listening...)

The waves continue to crash,  
then quickly fade out.

Over silence:

*In sedimentary rock, magnetite preserves a record of the earth's magnetic field.*

For a split second, there's the sound of humans, though the words are undecipherable, there's the distinct rhythm of counting.

Then music: cello... piano...

...there's a melancholic sense of longing in the music...

There is a sudden pause – silence: must be a break in that fragile tape from antiquity – and the music returns

*This is the sound of a piano and cello sonata recorded onto magnetic tape in the Ludwigshafen Theatre in 1935.*

*Early audio recordings used thin strips of paper coated with magnetite powder.*

*Here, magnetite preserves a moment of musical vibration.*

As the music slowly fades out, the sound of birdsong slowly fades in.

As the ears adjust, an underlying organic rhythm becomes noticeable,  
like morning rain on a rooftop

*This is the sound of a bird's dawn chorus.*

*Birds sing out like this in the early hours of the morning to let everyone know that they've made it through the night.*

*Migrating birds call out to let everyone know that they are here, to claim or defend territory.*



*Lower morning air temperatures and less active air currents may permit a dawn chorus song to travel further without as much interference.*

The now familiar sound of the earth's dawn chorus fades in, as both chorus' play together.

*This is the sound of the bird's dawn chorus and the earth's dawn chorus.*

*Shifting together as the planet turns, they usually sing at the same time.*

*This is the sound of a chorus duet for radio.*

The birds can be heard, the familiar sound of morning in many places on planet earth, intertwined with the morning sounds that cannot(?) be heard with the naked, human ear: the sound of the morning solar winds hitting the earth's magnetosphere.

The earth's dawn chorus sounds almost like an electronic (yet organic) version of the birds' dawn chorus.

Micro and macro can be heard at the same time.

Slowly, the earth's dawn chorus fades out,  
the bird's dawn chorus is left for a fleeting moment,  
until that fades too.

On this May evening, after a moment of radio silence, the plugs were pulled on all the radios around the room, almost simultaneously<sup>2</sup>. The antenna was switched off. The lights faded down.

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<sup>2</sup> The other performers from the event were surreptitiously seated around the space, next to radios or the power outlets for radios.

A spotlight lit upon a person sitting in the audience – all of a sudden she became not audience member but performer. Sitting cross-legged on the floor, bathed in a spotlight, surrounded by dark, she began to spin a number of differently sized, thin metal hoops on the floor. The individual hoops spun, sometimes fast and upright, sometimes slow and lolloping and low-down. Sometimes they crashed into one another. When they fell, she picked them up and spun them again.

Spinning, like the earth.

Spinning, like the moon around the earth.

And so the evening of performances went on, gliding, shifting, twisting, turning from one performance to the next.

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You have just read a description of the beginning of a VULVA CLUB event. VULVA CLUB is an on-going series of events organised by the collective Female Trouble.<sup>3</sup> This particular episode, *VULVA CLUB #13: performance as sound – sound as performance*, was organised in cooperation with AUSLAND. Although the concept for my work *chorus duet for radio* had already germinated, a first iteration of it was made specifically for this event. However, it is a piece that I consider to be a work-still-in-progress.<sup>4</sup> I write about the first presentation of it

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<sup>3</sup> “Female Trouble is a friendship based collective (Roni Katz, Agata Siniarska, Xenia Taniko Dwertmann) working in Berlin since 2013. We share a mutual process of artistic, intellectual, personal and political discourse revolving around identities, bodies, femininities and feminisms. Female Trouble focus on hosting events and practicing collective performances. We have created the public platform VULVA CLUB - themed screenings and lectures, realised in collaboration with artist-run spaces [...]. VULVA CLUB expands the collective's internal discourse beyond its own borders and works to amplify female/feminist perspectives” (Female Trouble, accessed 26 May. 2018).

<sup>4</sup> I have considered the (rather anthropocentric) option of looking further into magnetite in relation to human movement and memory: magnetite in traffic pollution is connected to memory loss, and walking and creating ‘mental maps’ (moving and remembering) can be used to repair such memory loss. Also, adding a

here, but the intention is that it will be developed into a longer, deeper, more detailed work.

Initially, the piece grew out of my discovery of magnetite, which, as you have read/heard, is a mineral used by numerous migrating organisms to navigate both short distances (from above to below a surface, for example), and long distances (to faraway continents). I began to think of this method of magneto-reception as a form of radio itself, as an ‘organic’ method of communication – of transmission and reception – that generally goes unnoticed. Magnetite began to represent the concept of radio in a physical (material) form, which extends over multiple species and scales.

It is a self-reflexive piece – using radio as a means to ruminate electromagnetic frequencies, transmission and reception – and the telling of a story of the interconnectivity of many organic things: the sun, the moon, the earth’s magnetosphere, mountains, rocks, oceans, humans, animals, birds, reptiles, molluscs, bacteria. It is the story of how one mineral can extend through a multitude of life-forms.<sup>5</sup>

It is also a work that mimics the activity of radio by oscillating, between human and more than human agencies, between micro and macro scales. Using the temporary network of a performance event to speak of many interconnected temporary networks at play is another example of self-reflexivity. My intention for the work in this setting was to draw attention to the immediate network and where it was gathered: the audience, artists, and facilitators, in and around the space, by presenting other examples of temporary networks of transmission at play. Magnetite was used as a thread to tie these stories together, and to digress to other

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layer of internet activity chirp as it moves around the earth with the sun could be interesting, too.

<sup>5</sup> This thought could be (and may well be, in the future) extended further to consider DNA: “All living beings contain DNA, be they bacteria, carrots or humans” (Narby 1998: 110), especially in terms of transmission: “DNA [is] an aperiodic crystal that traps and transports electrons with efficiency and that emits photons (in other words, electromagnetic waves) at ultra-weak levels currently at the limits of measurement – and all this more than any other matter” (109-110). See also Rattemeyer et al “Evidence of photon emission from DNA in living systems” (1981).

connecting factors in a complex network. Movement was explored through the planets, the moon, the sun, the migration of organisms, and multispecies navigation. Memory was explored by considering hereditary memory alongside migration (especially in hummingbirds), how geological information stored in rocks is a kind of ‘earth memory’, and how humans mimicked this in their technological developments of sound recording. This expands Durham Peter’s thought “Technology to humans is nature to many animals” (2015: 109) further to include other morphing ‘species’, such as rocks.

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The impression I got from my involvement in this project is that the concept and intentions of *Female Trouble* for this performance series, and therefore their organisational methods, took on very similar values to the concepts of “ecological thinking” and “empathetic knowledge” which can be attributed to Canadian Epistemologist Loraine Code (2006). Ecological thinking was evident here in the careful consideration of a larger whole: importance was placed not only on the individual works, but how they sat together with the others, how they functioned within the physical space, within the timing of the event, and, of course, with the experience of the audience in mind. Empathetic knowledge was manifested in the intention to create dialogues – between artists and facilitators, between artists with each other, between artworks, between artworks and audience, and between any combination of these, in order to create collaborative, self-reflexive knowledges. The relationship between artist/s and organiser/s was non-hierarchical; it was very much a relationship of mutual trust and support. Value was placed on open dialogue, on providing dedicated time within the space preceding the event, on comprehensive technical (light and sound) support throughout, as well as quality documentation and promotion of the event.

This holistic approach is about recognising interconnectedness. It is a methodology distinctly different to that of the singular viewpoint, the hierarchy of the subject-object position; in contrast to this, it is concerned with the interaction between parts in a system: “Many ecological strategies employ decentralised

approaches, relying on small contributions by (and interactions among) many simple entities [...], rather than a single, sophisticated decision-making entity” (Resnick 2003: 44). On this evening, seven (female identifying) artists performed small works, each less than 15 minute pieces. The performance event can become part of a collective knowledge-making practice; to Code, “knowledge is never made individually, but always in dialogue with others, second persons who inform and inflect how knowledge is produced” (McCartney 2006: 24), which was seen in practice here.

For this work, and due to the concept of the event (*sound as performance, performance as sound*), I wanted to explore the idea of sound as an effect of transmission, and transmission as an enactment (performance) of a larger, interconnected – yet wireless – means of communication. The *transmission* of the work was the performance of it, the acting out of its self-reflexivity. In her overview of radio art, especially placed within a context of sound art history, Kersten Glandien refers to radio as “a medium based on *distance and strict directedness*, rather than *immersion and diffusion*” (2000: 178). I realise that she may be referring to radio here in it’s traditional, institutionalised, technological form of broadcast (a strong signal of one to many), but works of expanded radio<sup>6</sup> and micro transmission aim to challenge exactly this definition of radio(art). Yes, the medium itself inherently requires distance between transmitter and receiver, and directedness in the fact that the receiver must be tuned precisely in order to receive the signal, but in terms of the experience of the audience, both immersion and diffusion were certainly at play. Gathered together on the floor of a gently darkened room, I am certain that those who listened to *chorus duet* felt immersed in the sound of a radio space, and aware of how the sound, sound frequencies and the frequencies of transmission were diffused within that (radio) space.

There are also other ways in which this piece strives to work against the norms and traditions of radio production – the physical setting, the pace, the content – and there are some ways in which it follows tradition. Perhaps it sits on a fine line between documentary radio, radio art (especially expanded radio), and

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<sup>6</sup> See Chapter Four for a more in-depth analysis of this.

storytelling; the latter may especially become more prominent when this work is broadcast through more traditional radio channels<sup>7</sup> rather than within a performative or expanded radio setting. Or might it be the use of the voice which makes this work straddle various sub-genres of radio?

Hildegarde Westerkamp is a Canadian composer who is famed to have been one of the first to create ‘soundwalks’. She is also an advocate for bringing together field recordings and radio: “If we can hear the small, quiet sounds of nature amplified on radio or in any electroacoustic context we may understand that even these less perceptible sounds have an important place in the environment as a whole and warrant respect and protection” (1994: 91). I mention Westerkamp here not only because of the importance she places on the bringing together of particular (environmental) sounds and their transmission, and how this is a form of activism and ecological thinking, but also because of her use of voice within her practice. Within her soundwalks, her voice is often there to act as a guide, to help transport the listener to the place of the recording: the voice acts as a connector between the site of the sound and the listener. This is particularly important as she is a recordist – most if not all of the field recordings in her work are self-recorded and she uses her voice to remind the listener of this position. Sometimes she describes things that cannot be easily gathered by listening to the sounds alone – the time of day, the details of the physical surroundings. I have used some similar strategies within *chorus duet*. Without narration, many of the sounds could be unknowable. The narration helps to both interconnect the sounds with one another, the audience with the sounds and the spaces of the sounds: the voice acts as a guide, a signpost. In the same way that the theme of magnetite acts as a thread within the narrative of the work, my voice acts as a thread within the sounds. My intention is that a form of intimacy is created between the sounds and the listener through the voice. It is also an interesting way to stitch together elements of the real and the imagined; the recordings are ‘documentary footage’, and whilst the

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<sup>7</sup> Since the showing that I describe here, *chorus duet for radio* has been broadcast on a number of temporary radio art stations (Radiophrenia, Glasgow, 2017; Datscha Radio 17, Berlin, 2017; Radio Revolten International Radio Art Festival, Halle (Saale), 2016) and as a presentation at *Sound Worms Ecology Gathering*, organised by the Augusto Foundation, Mariánské Radčice, CZ, 2016.

majority of the narration is based on science-fact, I don't know, for example, where that particular hummingbird had been or was going (and, just quietly, I don't think that she was working on building a nest in that particular recording).

The use of field recordings is another connection between this piece and the work of Westerkamp. She is an avid recordist, and although I have been known to be in the past, I will admit that none of the recordings were made by myself. Gleaned from sites such as *freesound.org*<sup>8</sup>, one could also consider this method of collecting as a mode of empathetic knowledge-making. With the activity of recording, however, comes a heightened awareness of the activity of listening. When you create a work for a listener, you have the act of listening in mind. Field recordings are curious in terms of listening for a number of reasons. There is often a familiarity to many sounds, because they are sounds from known environments, be they industrial, urban, or natural, and with this familiarity can come a certain sense of calm. Listening to field recordings can also lead to a heightened experience of listening in everyday life, and because of this they can be used as a form of activism, to draw attention to certain sounds, which are evidence of a certain kind of activity. With hindsight I can say that with *chorus duet for radio*, I was also attempting to answer this question, proposed by Westerkamp:

Most of us have been conditioned, especially if we have lived in the city for a while, to ignore the soundscape, including radio. The result is that we often do not even know what our ears put up with every day, how our whole being might be affected by an overload of sound input, and that we might unconsciously assist in the proliferation of increasingly noisy soundscapes. A question, then, is raised: how do we, as audio artists/composers, create the desire to listen in a world where the tendency is predominantly not to listen – to radio or the soundscape? (1994: 88).

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As a final note on this piece, I will discuss the musical references within the work. Not only are the words 'chorus' and 'duet' – with (oxymoronic) musical

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<sup>8</sup> A website dedicated to creative common sounds – uploaded by users – for people to use within creative projects, often works for film, television, sound and radio, games, or of course, just for the enjoyment of listening and geeking out on the technical details of recording equipment.

connotations – in the title, indeed a piece of classical music is even part of the composition. The mysteries of the universe beyond our planet have long been inspiration for composers, which can be seen in various famous works of music, from Holst's *The Planets*, Haydn's *The Creation* to many works by William Herschel, who worked explicitly in the 'twin sciences' of music and astronomy.<sup>9</sup> Perhaps because, with closed eyes and an open mind, sound and music can transport humans beyond the tiny habitable earth on which they live.

The intention of including the word 'duet' in the title, was partly to draw attention to the musical connotation of 'chorus', but also to reinforce the notion of interconnectedness: the duet is a simplification of interconnectedness. In this case, it is the pointing out of two connected elements within a complex network of interconnectivity. This work is a duet between many things: the sun and the earth's magnetosphere; the earth and the moon; analogue and digital media (almost all contemporary media is a hybrid form); transmitter and receiver; and, as most explicitly described within the work, the earth's dawn chorus and the bird's dawn chorus. A duet takes place between two performers, each with equal importance. Giving various elements an equal importance in the work can be seen here as giving equal respect.

At just over half-way through the piece there is music in the form of a Sonata for cello and piano; it is an early example of recording music onto magnetic tape. It was not chosen for its musical quality or sonic aesthetic, but for the fact that it was the earliest recording I could find which used magnetite powder. The importance was on the physicality of this recording, the materiality. Sound, made material, made sound again, through the same material that guides (and perhaps even holds memory of) migrating organisms. Despite my initial reasoning for selecting this sound source, some facets of the Sonata are illuminating when considering many of the themes of this piece.

Historically, the Sonata grew from a desire to situate music in a more intimate setting than its traditional performative locale (the theatre or opera house), and became integral to what would be known as Chamber Music. This

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<sup>9</sup> History allows me to reference three solo, white men. (More on this in the following chapter...)



intentional step away from listening in the public sphere marks a modification in listening practices from a time before the existence of inscriptive and transmission media. Currently, many listening habits are at the opposite end of the spectrum; individualised listening through headphones and listen-on-demand media make private listening the norm. Despite using inscriptive and transmission media, presenting *chorus duet for radio* as a work for expanded radio was a gesture (back) towards intimate, yet collective listening experiences and practices, which was extended further by its self-reflexive nature as/about the trans-scalar encounter.

The Sonata is one of the most prominent forms of duet in instrumental music, in which one voice is dominant, while the other is an accompaniment (usually the piano), yet each contribute to complex developments of the thematic material. It is also a duet which is played by instruments, rather than sung.<sup>10</sup> Thinking of the *chorus duet* as a Sonata would mean making the earth's dawn chorus the dominant voice, which constantly sings in accordance to its movement around the sun, and the birds' dawn chorus as an accompaniment, in which birds across the earth join in with the arrival of morning, in one continuous loop. I find myself using the words *voice* and *sings*, despite trying to articulate something which is *played*; it can be seen as the sun playing on the earth's magnetosphere, as the birds playing with their vocal chords.<sup>11</sup> As a Sonata intertwines and connects threads of music into moments of dialogue (indeed, oscillates?), so does this piece connect multiple species and perspectives into moments of conversation for the listening ear.

*Chorus duet for radio* is an example of a collective, trans-scalar listening encounter, which works to expand notions of the many facets of radio through artistic practice.

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<sup>10</sup> See also Anna Friz on (not birdsong but) "Radio as Instrument" (2009).

<sup>11</sup> An interesting aside in terms of duets: "Songbirds have evolved a specialized two-sided voice box called the syrinx that allows them to perform impressive feats of vocal gymnastics—including the unique ability to create two unrelated pitches at once." You can see fascinating animations of how this works in a number of birds species here:

<https://academy.allaboutbirds.org/features/birdsong/how-birds-sing>

## Chapter Three

### The Matter of History:

### Pirating, Listening and Imagining as Acts of Resistance

#### A (hi)story of radio listening

Even this is not so simple. How do we know? All we have are official histories (Sawchuk 1994: 215).

The first documented radio listening experience outlines a very poetic beginning. It was 1876. After the day's work was done, John Watson, Alexander Graham Bell's assistant, would spend his evening hours listening in on the (not yet fully-developed) telephone. He listened to snaps, grating, pops and chirps. He didn't know what he was listening to, but he found it captivating. It was at once about paying close attention to the tiny details of these extraordinary sounds, whilst at the same time, enjoying the grandiose experience of connecting to these unpredictable real-time resonances generated somehow by the world. It turned out, as he suspected, that he had been listening to the earth's natural radio; the non-insulated iron telephone wire acting as an antenna. Working tirelessly to develop a technology in order to create long-distance, two-way communication between humans, he inadvertently listened to the universe speaking its electromagnetic particularities within his space and time, and was unable to speak back.<sup>1</sup>

Perhaps Watson was not looking for, or expecting, a conversation with the universe, but it is an interesting image in terms of human and nonhuman agency and early telephone and radio technologies. Through an attempt at mastering an instantaneous, long-distance human communications device, overcoming space and time – so often seen as the driving force of (early?) radio, wireless and

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<sup>1</sup> There is some irony to Brecht's infamous, 1932 critique of radio here, when he claimed that it "would be the finest possible communication apparatus in public life, a vast network of pipes. That is to say, it would be if it knew how to receive as well as to transmit, how to let the listener speak as well as hear, how to bring him [/her] into a relationship instead of isolating him [/her]" (15). Of course his critique stems from the fact that the beginnings of radio and telephone technology were so closely intertwined, but let's ask that to the sun: why aren't you *receiving* as well as transmitting?!

communication technologies – a much bigger signal of communication revealed itself: the earth within its solar system.

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...the language of unhuman vibrations – radio waves from across the galaxy, which may hold cosmic secrets. These secrets are not based on meaning,<sup>2</sup> per se, but on force, flowing matter, revised awareness of space and time (negating human centrality), and the rediscovery of alien music (Milutis 2006: 96).

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I read Douglas Kahn's tale of the first documented radio listening experience described above in *Earth Sound Earth Signal: Energies and Earth Magnitude in the Arts* (2013), though since then I have heard it reiterated in high-profile radio art and academic contexts. Mark B. N. Hansen used it in *Triggers: Introducing the Technosphere* at 100 Years of Now, HKW, in 2015 as an example of what he calls "radio's doubleness" (1m50s), pointing out that artificial radio and wireless technologies exist side by side with their natural counterparts.<sup>3</sup> Anna Friz mentioned it in her 2016 Radio Revolten opening speech, to illustrate the importance of listening, and to exemplify what can be learnt by simply being aware and paying close attention. The tale is compelling, not only because of its poeticism, but because it offers a new perspective on radio history: Kahn claims that "Radio was heard before it was invented. It was heard before anyone knew it existed" (2013: 1). This fresh perspective, gained through meticulous archival research, into Watson's diaries for example, still situates the realization and

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<sup>2</sup> "...But we have to rethink what we mean by meaning. If we mean mental content intentionally designed to say something to someone, of course clouds or fire don't communicate. But if we mean repositories of readable data and processes that sustain and enable existence, then of course clouds and fire have meaning" (Durham Peters 2016: 4).

<sup>3</sup> A curious revelation in 2015 (which perhaps brings to light the lack of common knowledge about natural radio); as the first chapter of this thesis demonstrated, radio artists and practitioners have been musing on exactly this fact since artificial radio's inception. See also Marinetti & Masnata's *La Radia* manifesto from 1933: [www.kunstradio.at/2202A/27\\_01\\_02/laradia-e.html](http://www.kunstradio.at/2202A/27_01_02/laradia-e.html)

acknowledgement of radio's existence as a white, Western, male discovery. Early radio history tells us of the various, individual experiments and discoveries that took place in Europe and the United States from the 1890s-1920s, which moved technology forward, closer to what broadcast radio and wirelessness is today. Each of these steps seemed to involve patents, bickering, and the claiming of technological discoveries in a decidedly colonial fashion.<sup>4</sup> Even the discovery of electromagnetism, the magnetosphere and ionosphere have been laid claim to in a similar egoistic manner; the radiation belts surrounding the Earth are indeed named the *Van Allen Belts*, after the man who discovered/claimed them. This way of creating 'history' is certainly nothing new, but I argue that it would be productive to think about ways of making and creating knowledges ecologically (holistically), by recognizing and respecting continual fluxes of influence, acknowledging the *collective influences* involved in knowledge-making practices.

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How do the Northern lights sound? Scientists say [this] and that, they are not sure yet. Most of them say that Northern Lights are not audible [to] the human ear. But I think that the Northern Lights have been sounding in a unique way for ages: through the unique stories [told] by the people who have been living under [the] auroral belt, through their stories, through their folk songs (Ešenvalds 2014: 13m20s).

In this short chapter, I am unable to go into details of the history of knowledge of electromagnetism, or aether theory, which has been pondered upon across continents for centuries, but I will turn to some folklore and mythology surrounding the Aurora Borealis, namely that these tales speak of sound. To the Sámi people of Northern Norway, the Aurora Borealis are called *Guovssahas*, which means 'audible light'. It is not so easy to remotely research folklore that has

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<sup>4</sup> This is admittedly a loaded term, but I wanted to acknowledge the absurdity of claiming technological advancements, which were being made simultaneously by numerous people in numerous places. The airwaves themselves have arguably also been colonised (occupied and exploited) from the outset of their use in military and corporate broadcast, which can be seen even today in highly stringent broadcast laws; until now, the campaign for a 'free radio' frequency in Berlin has been unsuccessful for over 15 years has been.

been passed down orally through generations, nor is it easy to get away from colonial<sup>5</sup> and/or masculinised<sup>6</sup> written tellings of these tales, which by default fall into the logic of their time (ie. female stories were neglected or deemed unimportant by the Western men who were documenting ‘other’ cultures). But for the purpose of this chapter, the point is that the Aurora Borealis is a visible version of radio, and to many people for millennia it has been associated with sound. Despite ancient folktales, and many contemporary accounts by laypeople about the existence of auroral sounds, it is still somewhat controversial as to whether the sounds can actually be heard; it has been argued that hearing, in this context, is extremely subjective. A study from Aalto University in Finland also claimed that “researchers suspect that there are several mechanisms behind the formation of these auroral sounds” (2012),<sup>7</sup> but because they were indeed recorded (with a microphone, not a human ear), general perception may begin to change as to whether the Aurora makes sound. Here, however, I am reminded of Jeremy Narby’s book *The Cosmic Serpent: DNA and the Origins of Knowledge* (1998), in which he goes to painstaking efforts to reveal that what was discovered about DNA in the Western world in the last century, has been explored, mused upon and depicted for centuries by Shaman of various cultures.

Radio may indeed have been heard before it was invented, but it was also heard a wealth of times before Thomas Watson listened to it via an iron wire. It has been heard ever since humanity’s contact with the Aurora Borealis and Australis.

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<sup>5</sup> Earnest William Hawkes was a (U.S) American anthropologist who could be criticised for participating in the colonial project. However, through his studies of indigenous peoples, in 1916 he documented experiences and myths connected to auroral sounds: “The whistling, crackling noise which sometimes accompanies the aurora is the voices of these spirits trying to communicate with the people of the earth. They should always be answered in a whispering voice. Youths and small boys dance to the aurora” (153).

<sup>6</sup> [www.bivrost.com](http://www.bivrost.com) offers some interesting historical tales surrounding the Aurora, though many involve male Gods and warriors or are “linked to death of women, especially to dead virgin souls” (20/05/2018).

<sup>7</sup> See also the researchers’ website: <http://research.spa.aalto.fi/projects/aurora>

## Auroral (hi)stories: [the bespoke headpiece](#)<sup>8</sup>

We sat peeling clementines, carefully, so that the skin came off in spirals, which could then be twirled back around to make the shape of a semi-open rose. We placed them on the radiator to dry and disperse a sweet-citric aroma. And as we peeled, and re-wrapped, and bit and chewed, I asked if she remembered about natural radio.

I said, you know the moon circles the earth, helping to create a magnetic field which shields us from the sun's rays. And when the sun's rays hit this magnetic field – which is kind of like a protective bubble around the earth – you can hear them if you have a special device. Well, you can also see them, too. Then they're called the Aurora Borealis or Australis, depending which side of the planet they are. There are many, many folk tales about the Aurora, which tell of the sound that they make. [I heard one of these stories, which had been passed down orally from one generation to another over time, about nomadic peoples who lived under the Auroral belt in the North.](#)

[They were very connected to the Aurora, especially the women. Some could hear sounds as they watched these glorious dancing light displays in the night skies. It is said that as a special rite of passage when girls turned into women, it was customary for them to go out alone, for three days and three nights, to experience and connect with the Aurora in all its splendour.](#)

She asks, *why is it just the girls?*

I say, do you think it should be the boys as well?

Yes, she replies.

For quite some time I think: she is a better feminist than me, this is equality.

Then, after quite some time, I realise that she has not yet come to comprehend the injustice done to women and their stories (and the silencing thereof), and that sometimes a feminism is needed which favours women, and their stories, in order to create an equality.

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<sup>8</sup> [\(imagined.\)](#)

Having realised that flowing hair enabled an intensified listening experience, mothers and female relatives –

I interrupt myself: I suppose it should be the fathers and the male relatives as well?

Yes, she says, *it should*.

I must say I like it when males are in a nurturing position, so it was hard to disagree.

– they made special hats for the girl-women, out of antlers, tree branches, pine cones, or anything that would act as an antenna. These headpieces were often passed down and embellished through generations.

During these rites, the girl-women would wear the bespoke headpieces in order to receive the sounds of the Aurora. It is said that over the three days and nights, with the help of these hats, one could become so attuned that the voices of the unborn and the deceased could be heard. It is said that these voices provided guidance and support for the delicate journey into adulthood.

We sit still and think for a while. Then I ask, what do you think someone who has not yet been born would say to their relative or mother-to-be?

She thought for quite some time.

*Kikariga*, she said.

And what does that mean?

*Soon I will see you.*

And what do you think someone who has already died would say to their relative?

Again, she thought.

*Sukalaria*.

And what does that mean?

*I'm sad I left you.*

## Pirating histories, reclaiming airwaves

it matters what stories tell stories, it matters what thoughts think thoughts, it matters what worlds world worlds. That we need to take seriously the acquisition of that kind of skill, emotional, intellectual, material skill, to destabilize our own stories, to retell them with other stories, and vice versa. A kind of serious denormalization of that which is normally held still, in order to do that which one thinks one is doing. It matters to destabilize worlds of thinking with other worlds of thinking. It matters to be less parochial. If ever there was a time, it is surely now, and I think all of us lack many of the skills (Haraway 2014).

Art and music history stretch further back than sound and radio art history, therefore they are perhaps more embedded in their tellings of the past. We don't have to look far to see how current media, for example, continue to perpetuate mono-historicising in many of these fields – the BBC's recent series on minimalism featured four solo, white men as the canonic figures of this musical genre (2018). And yet we are beginning to see the emergence of a backlash to, and critique of such historicising in all of these fields. Jennifer Allen wrote an insightful response to the BBC series, titled *The Trouble With Menimalism: Rescuing Histories From The Cutting Room Floor*, in which she stated that such exposure of minimalist music eliminates “all the work done in the last two decades to put previously neglected figures back into the historical record” (2018).

Looking further back, Linda Nochlin's essay *Why Have There Been No Great Women Artists?* (1971) is an excellent critique of institutional obstructions which have blocked women from certain levels of 'success', whilst simultaneously critiquing art history itself for how it has told its tales, and by whom they have been told. It is also an evaluation of art education, and the notion of genius – which can be likened to the canon in music and literature. The singling out of one author/ composer/ artist/ choreographer/ inventor also fails to recognise and respect collaborative processes of making.

Needless to say, there is also a distinct lack of female representation in radio and radio/sound art history. It can be acknowledged that there have been social and economic inequalities in place, which have lessened the chances for



women to take part in these fields, but it is also important to note that often when women *have* been involved, this involvement has subsequently been silenced, overlooked, or gone undocumented. Currently there is a lot of work and research being done to rectify such acts of one-sided historicism, and bring lesser-known figures from the past to light. But even this could lead to the question: who is doing this work? Who is invested in broadening notions of the past, of feminising and queering radio and sound art history? Does a truly diverse history warrant a complete overhaul of traditional (colonial?) notions of what history can contain, in order to write an ecological version which recognises interconnected meshes of influence?

Noticing this absence of a diversity of voices, however, is another case for listening out for silences, paying attention to gaps, respecting minority voices and sounds by noticing their absence.

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In 2007, Dr. Ryan McFadyen & Dr. Kate Donovan, presented a (performance) lecture at *Radio Visionen: 100 Jahre Radio*, at Podewil in Berlin about an exhibition we'd curated at the *Gugenheim in Riga*, called *Katherine and Catherine – The Greatest Sound Icons Ever Ignored*. We used our special academic/researcher voices and costumes to tell the ever-expanding story of the 'CKatherines'. In their youth, in the 1950s, the CKatherines had worked for the BBC (though there is nothing of their presence remaining in the BBC archives), and began to experiment with field recordings, self-built instruments (including microphones – the tool that listens), and many techniques which now belong to the sound and radio art genre (cut-up reel to reel tape works, considering the aesthetic and political value of 'silence', site-specificity, etc). From what we could glean from the material available (much was damaged in a fire), they were not particularly well-liked by their colleagues and contemporaries, and therefore their endeavours were essentially wilfully ignored. We argued that many of the iconic sound and radio works that had been attributed to – you guessed it – white, western men, had

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<sup>9</sup> (imagined.)

actually been preceded (though unacknowledged) by many of the works of the CKatherines. And we played examples of these works.

With ten years hindsight, I realise that although much of this project was borne out of a tongue-in-cheek response to the frustration at the lack of visibility of women in sound and radio art history (and it was certainly made with joy and many, many laughs imagining these characters, their accomplishments, and the various situations they were involved in), it still has very serious undertones regarding questions of ‘likability,’ exclusion – the subtleties of how such exclusion can occur in the workplace – and neglected authorship. It is still relevant today.<sup>10</sup>

The act of creating this work, of queering history – by which I mean subverting dominant modes of creating and telling histories – I believe had a cathartic effect on us as artists; there was a sense of liberation in imagining a history not only of inclusion, but also of important figures who did not necessarily aim to be canonic. The ‘fact’ that the CKatherines didn’t care about authorship was left to the viewers’ imagination: were they blasé about it because they recognised the unlikelihood of their work ever being taken seriously, let alone acknowledged, or was it because they were focused on experimentation and play, over and above recognition? I believe that for the CKatherines, the importance was placed on the *doing*, rather than the *claiming*. This allows artistic practice to fall out of the logic of property, to disrupt ideas of the canonic whilst simultaneously revealing the networks of creative and knowledge-production that are inherently always in place.<sup>11</sup>

When the lecture was presented, however, it slipped away from our intimate world of shared imagination; it spiralled into something else. Despite the voices on the recordings being mine and Ryan’s (with our best plummy BBC accents, and in my case deepened down a bit too),<sup>12</sup> the people in the audience who didn’t know

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<sup>10</sup> A recent study by Ohio State University claimed that in terms of employability, it is more important for women to be ‘likable’ than to achieve top academic grades (2018).

<sup>11</sup> The claiming back of authorship on behalf of the CKatherines in our presentation, however, could arguably push it back into the logic of property.

<sup>12</sup> Does a deeper voice lend authority and/or credibility?

us, believed us. They took the recordings and the information that we presented to be real.<sup>13</sup>

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Of course, ours is not the only artwork to deliberate on alternative histories. I will briefly mention another two works as a way of showing the prevalent sense of the limitations of mainstream histories and the necessity for other tellings, for creative responses to the intrinsic lack of representation, and (often) the joy resulting from creating and imagining such histories.

Composer Jennifer Walshe noticed the absence of her homeland, Ireland, in the history of avant-garde music and created the collective (subtly fictional) online archive *The Aisteach Foundation* ‘*the avant garde archive of Ireland*’, to which anyone could add content. [It was officially founded in 1974 by a male composer and female poet](#), though actually established, and admitted in a disclaimer on the website, by Walshe in 2014. It is arguably nationalistic, and could be seen as counterproductive as such, though of course Irish history certainly has a minority voice within British and European accounts. Perhaps to seem authentic as a standard form of historicising (but nevertheless a disappointment), the majority of the (fictional) composers are male. However, Walshe states that “The Aisteach Foundation is a communal thought experiment, a revisionist exercise in ‘What if?’, a huge effort by many people to create an alternative history of avant-garde music in Ireland, to write our ancestors into being and shape their stories with care” (2014).

Composer Celeste Oram subtly created an incredibly detailed biography of [Vera Wyse Munro \(1897 – 1966\)](#), a “[pioneering New Zealand ham radio broadcaster, improviser, and sonic experimenter. Her primary media were amateur radio broadcasts, Morse poetry, and sono-topographical scores](#)” (Oram n.d.). This telling deftly weaves [Munro’s story](#) into the technological history of early telegraphy and radio, along with societal changes of the roles of men and women during the first and second world wars, and the national history of New Zealand’s

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<sup>13</sup> This was a time before smartphones were commonplace; not that people were less credulous without them, but with them comes the ability to fact-check.

broadcasting within an international wartime context. Munro's creative endeavours were naturally ground-breaking in their content for their creative use of radio technologies, and the concepts of instantaneous long-distance collaboration that radio technology allowed for the first time (though their 'avant-garde' nature is attributed to the legal necessity to remain somewhat clandestine on the airwaves, rather than the *will* to be revolutionary). Oram has created broadcast reenactments, including remaking a crystal radio set with local materials of the time, in order to hear the electromagnetic spectrum *as Munro would have done*, and a contemporary (2015) digital translation of a composition, *Skywave Symphony*, that was initially composed for two musicians (one performing long-distance) and 100 radios: "The amateur radio community throughout New Zealand would be mobilized to broadcast on individual wavelengths the sound of their own reception static. (Radio reception and therefore the sonic properties of radio static differ significantly according to geographical characteristics like groundwater levels, atmospheric charge, topography, etc.) The 100-strong troop of onstage radio operators would then tune through these static broadcasts according to a specifically arranged frequency and volume score" (Oram n.d.). The reenactment involved playback of site-specific sounds through mobile phones; it does not have quite the same effect as the imagined piece, with its liveness and access to multiple places in realtime, but perhaps this allows another way for the audience to listen and imagine – through involvement.<sup>14</sup>

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Piracy is an act of thievery but, like the issue of appropriation, its ethics depends on who you are stealing from (Sawchuk 1994: 215).

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<sup>14</sup> I cannot hide my disappointment, however, on seeing documentation from the 2015 premiere that Oram chose solely male musicians to perform the piece.

The female clandestine on the airwaves is a trope that has been explored by a number of radio-makers and thinkers.<sup>15</sup> Margaretta D'Arcy wrote *Playing with the Airwaves* in 1990, about radio as a site for collective play, about the power of taking technology and the airwaves into one's own hands, and about how all of this works together to provide a space and a methodology for feminist voicings which go directly against those perpetuated in the theatre. Kim Sawchuk's *Pirate Writing: Radiophonic Strategies For Feminist Techno-Perverts* (1994) is a written adaptation (in script form) of a complex radio-play-performance, which is semi-autobiographical and situates itself in a particular place and time within radio art history (Montréal, Canada in the early 1990s). It deals with extended networks of gender identity and multiple personas, radio technology, cybernetics, the voice, noise, consumer-capitalism and the notion of piracy within all of these aspects. Despite being almost 30 years old, the previous two narratives reveal how much there still is to take back or to reclaim by female radio-makers; they reveal the necessity for piracy of the airwaves in order to make space for women's voices, and the need to reclaim connections with and knowledge of the technology which enables this; also, as I have shown here, the necessity for a piracy of history – not to speak *for* another, but in order to imagine and to know a history of inclusion.

My pirate history is a story that I did not so much uncover, as fiction that I have written back into my life. Pirate writing is an act of thievery where I reconstitute my self on the basis of seizing the tools to mark the world that has marked me, a world at every turn mediated, affecting my self-perceptions and perceptions of others. I want to pilfer this image of the electronic pirate, currently lodged in popular culture as a white macho, individualistic masculinist challenge to 'society.' This myth fallaciously bifurcates individual and community. (Sawchuk 1994: 206-7).

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<sup>15</sup> It can be seen in the live radio performance/ radio art broadcast/ pirate radio intervention *The Clandestine Transmissions of Pirate Jenny* by Anna Friz (2000), and in the texts written about this work (Friz 2003, 2008, 2010; Ouzounian 2008).

Radio precedes and exceeds us, it lends itself to the imaginary because it stretches beyond our wildest comprehensions. Thinking in such scale forces us to think beyond what we know, have known and could possibly know; it is a wonderful moment for what Donna Haraway terms *speculative fabulation* (Haraway 2016)<sup>16</sup>. Sound and radio also lend themselves to the imagination – they imply and suggest, they invoke without showing. Hence the term for radio plays: *theatre of the mind*.

what you see, i.e., film, you tend to believe... But what goes in through the ear, you supplement with your own creative imagining” (Foreman/Donovan 2015: 1).

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In concluding this chapter, I want to bring together the matters of history and electromagnetic radiation, as material to be pulled apart and examined (Evans 2018), as things that we constantly contribute to, and as things that we are also able to interrupt and interfere with in order to resist and dismantle “conventional constructs and habits that do not treat everyone and everything fairly and equally” (Gibson & Gagliano 2017: 125). I have argued here that listening, pirating and imagining are acts which enable a recalibration of history and its effects, and which pay respect to the intricacies at play in knowledge and creative production. Reclaiming the airwaves and reclaiming history is necessary for the feminist and queer project, which in itself is intrinsically connected with the ecological thinking I deem necessary in our current age of environmental crisis.

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<sup>16</sup> Fabrizio Terranova, the film-maker who made the documentary/film *Donna Haraway: Story-telling for Earthly Survival* (2016), describes speculative fabulation as “Enlarging the spectrum, the relationship to History, to stories, inventing sensitive ways re-unfolding in order to re-play and see what we sidelined, a whole series of possibilities that are still active today, to transform things (...). Multiplying types of approaches and possible narrative models. Creating characters, myths, inventing new situations to intensify this world” (2016).

## Chapter Four

### The Radio Garden: On Datscha Radio<sup>17</sup>

Ideally, when we listen to radio we are listening to a listening medium. Radio listens through its microphones to the world, to human voices, to the environment (Westerkamp 1994: 89).

I will begin preparing the ground for this chapter by providing a brief overview of the local context from which DR<sup>17</sup> emerged. In current times of fervent anthropocene discourse there is also much interest in human relationships to ‘nature’ in the art world, and indeed a repositioning of what nature actually is. The *Reset Modernity!* exhibition, co-curated by Bruno Latour at ZKM in 2016, looked at the effects of globalisation whilst simultaneously claiming that humans need to find their place again because modernity has failed.<sup>1</sup> Aarhus Contemporary Art Museum also centred the theme for their Triennial exhibition *The Garden – End of Times, Beginning of Times*<sup>2</sup> in 2017 on exactly this.<sup>3</sup> We see here how art is being used in various European institutions to challenge and reconceptualise the anthropocene during times of great change; art often comes together with science in these explorations, which can clearly be seen in Berlin, for example, in the HKW *Anthropocene Project*<sup>4</sup> and continually at smaller project spaces like Spektrum.<sup>5</sup>

Despite its problematics, anthropocene discourse makes space for the realization of agency beyond the human, which has led to a closer inspection of nonhuman worlds in many disciplines, but particularly that of Art+Science described above.<sup>6</sup> In 2016-17, aiming to decentralise anthropocentric perspectives, Art Laboratory Berlin organised a series of exhibitions, events and symposia under the title *Nonhuman Subjectivities*, including an exhibition on *Nonhuman Networks*, and an exhibition and interdisciplinary conference on *Nonhuman*

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<sup>1</sup> “We need to reset modernity's operating system” (Latour 2016).

<sup>2</sup> Which won a Global Fine Art Award (GFAA) for Best Public Art/ Exhibition or Installation in 2017.

<sup>3</sup> “The garden as a symbol of humankind’s changing relationship to nature” (Jones 2017: cover text).

<sup>4</sup> “Basic cultural research using the means of art and science from 2013.” [www.hkw.de/anthropocene](http://www.hkw.de/anthropocene) (16/04/2018).

<sup>5</sup> [www.spektrumberlin.de](http://www.spektrumberlin.de)

<sup>6</sup> Haraway: “I am committed to art science worldings as sympoietic practices for living on a damaged planet” (2016: 67).

*Agents in Art and Culture* in 2017. Currently there is also much interest in plant communication and vegetal agency due to research being made into plant science. From an Australian perspective, Prue Gibson has done excellent work on bringing together notions of plant sentience within fine art practice,<sup>7</sup> looking especially at the work of Janet Laurence,<sup>8</sup> who

raises awareness for the way humans have given priority to careless agriculture and unsupportable industry, over the very species that provide abundance and benevolence. By considering nature, alongside us, rather than for us, Laurence conducts a quiet environmental activism. She does so by drawing our attention to the materiality of plant matter, and to the repetition and similarity between human and plant life (Gibson 2016).

Donna Haraway references a story by Ursula Le Guin<sup>9</sup> to speculate whether plant communication could be considered as art, and maintains that there is

the need to question the tissues of one's knowings and ways of knowing in order to respond to nonanthropocentric difference. [...] Plants are consummate communicators in a vast terran array of modalities, making and exchanging meanings among and between an astonishing galaxy of associates across the taxa of living beings. Plants, along with bacteria and fungi, are also animal's lifelines to communication with the abiotic world, from sun to gas to rock (2016: 122).

In this chapter, I argue that radio art is a valuable means for the exploration of, experimentation with and collective knowledge -making and -sharing practices about the position of humankind within the materialities of 'nature'. Radio art is also a device for the shifting of ontological standpoints necessary in creating sustainable solutions in uncertain times. Radio art offers and places value on listening, on respecting and caring for by paying close attention and being open with all senses. In this chapter I use *Datscha Radio*<sup>17</sup> as an example of a trans-scalar radio art project which listens; it listens from a self-reflexive and site-specific

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<sup>7</sup> See also her forthcoming book: *Covert Plants: Vegetal Consciousness and Agency in an Anthropocentric World* (Ed), Punctum Books, Winter 2018.

<sup>8</sup> See her book *Janet Laurence: The Pharmacy of Plants*, University of New South Wales Press (2015).

<sup>9</sup> *The Author of the Acacia Seeds' and Other Extracts from 'The Journal of the Association of Therolinguistics'* (1974).



location, and it listens to and shares the intricacies of the complex networks of communication at play in both garden and radio. *Datscha Radio*<sup>17</sup> is also an example of art, science and activism in collaborative-practice, a combination that Haraway deems necessary for “earthly survival” (2016).

## Radio Gardening

All activities in the electro-magnetic spectrum form ecologies in relation to one another conceptually, performatively, materially (Friz 2014).

A radio can be cultivated in much the same way as a garden; structures can be set in place to allow for ‘organic’ development, seeds can be sown, ground prepared, areas laid out, research made, pieces cut back or pruned, and there can be a sense of wonderment at how/which new (unfamiliar/ unplanned/ unexpected?) seeds fly in on a breeze. And the garden can be transmitted in much the same way that it transmits itself all the time. The garden is naturally awash with/in frequencies.

The radio and the garden are similar in that they can both be considered as ‘temporary networks’. A garden is a complex inter-species network, (with both parasitic and symbiotic tendencies), with trans-scalar effects, that is controlled (at least in theory), maintained and cultivated by people. A technological radio network is also operated by people, and it can be trans-scalar. There is an ecology to both garden and radio. Radio artist Anna Friz uses the term transmission ecology:

in reference to both the symbolic spaces of cultural production such as a radio station, and to the invisible but very material space of dynamic electromagnetic interactions, both of which feature the collaboration between people and things. Transmission ecology asks more than ‘who owns the airwaves’ by questioning the shifting relationships between all actors in the environment, from human to device to localized weather system to nearby star, and thus is not defined by homeostasis but by constant change. These relationships also support a theory of technology where people are not the absolute controllers of things, but where a push and pull of collaboration occurs within complex material and cultural environments (Friz 2014).

It is not difficult to see the garden from the same perspective, also interchanging culture for nature, thus blurring the boundaries between the two.

Considering the radio and the garden in a community context, it is perhaps the easiest way to draw parallels between the two potentially disparate places and activities. In this framework, they are both about collective involvement, establishing fruitful structures from which to share, and engaging in communal practices with elements of work and leisure. They may both embrace DIY culture and the bigger concept of sharing, intermingling the individual within the community or the collective. They create a site in which to cultivate knowledges, to create collective knowledges within an open platform – in which invisible, wireless forms of communication are at play – which also works as a site for socialisation and engagement, and, perhaps most importantly, for resistance to dominant ways and structures.

## Datscha Radio

*Datscha*<sup>10</sup> Radio was initially co-founded by writer, sound and radio artist Gabi Schaffner and net activist Pit Schulz, together with Verena Kuni in 2012. It is a project dealing with radio, gardening, and many entwined ideas and practices from ethnology, sound and radio art, sharing, community, to DIY culture and ecology, which has taken various forms and iterations since its inception. Its first iteration, *Datscha Radio – a Garden in the Air*, began in the form of a temporary radio station that took place in 2012 in Schaffner’s private garden in Rosenthal (in the north of Berlin), and was made in cooperation with reboot.fm. It broadcast (online and micro-FM) for 7 consecutive days from the Datscha, and featured many of the components which were also included in *Datscha Radio*<sup>17</sup> (which will subsequently be described in more detail): “[an] outside studio, concerts and productions, the feature of transparency, bilinguality, the Open Call, guest streams, transmitters (really Mr. Schultz’ idea) – while my [Schaffner’s] part of the concept was and is the garden as a matrix and metaphor for sharing, organic growth and communication made viable for radio making” (Schaffner 2018, email). The second iteration in 2014 was titled *100 Days of Datscha Radio. Compost &*

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<sup>10</sup> “Datscha” is originally a Russian term for a garden summerhouse. The colloquial term in the former GDR was either “Datsche” or “Datscha,” hence the name as the location lies in one of the biggest garden colonies of former East Berlin.

*Poiesis*. It took place at the Hessen state horticultural show in Gießen, and was more specifically focussed on German garden culture through ethnographic field observations. Schaffner's research into the show's "traditions and perspectives of gardening" (Schaffner 2012) was compiled into an open archive including text, sound and visual material, while sound recordings were put into an 'audio composter' devised by Pit Schultz. In 2015, Schaffner began using the website as a blog space and developed "*Datscha Radio* as a platform for international garden and ecologic issues, which also serves as a pool for documentation and interviews which I assemble during my travels" (2018). Many of these interviews and recordings find other outlets, and some were broadcast in the DR<sup>17</sup> *World Gardening* programme, for example. In 2018, in cooperation with Medialab Prado, Schaffner staged *Datscha Radio* in an urban garden in Madrid; with the support of local artists and gardeners, a one-day radio programme was streamed online and broadcast via micro-FM transmitter on location.

### **Datscha Radio<sup>17</sup>: Plots and Prophecies**

In 2017, however, *Datscha Radio*<sup>17</sup> took place with many of the same components as the 2012 iteration. Again, the project broadcast from Schaffner's garden in Berlin, though this time for 5 days; it broadcast via micro-FM transmitter in the garden, streamed online 24 hours per day, and also broadcast most of the time on an FM frequency in Berlin and Potsdam. This time, underneath the main theme, each day had a sub-theme attached to it. The programme structure was a horizontal one, which repeated over the five days, yet was tailored to suit each daily theme. There was an Open Call in which sound and radio makers (professional, amateur and hobbyist) were invited to contribute to the programme. Works were submitted from a wide variety of people, genres and countries, and selected for the various programmes and theme days that they suited best. There was also a mix of 'curated'/invited works and participants, and space left open for people to take part, either by submitting works, or by spontaneously joining in on location. I am writing about this iteration in particular, as my own involvement as co-organisier, editor and presenter provides extra insight into the programme and concepts behind it.

The festival theme was *Plots & Prophesies*<sup>11</sup> and the aim was to place it within current discussions of the so-called anthropocene. The garden, after all, is a human construct. Here, the human reigns over the land, cultivating plants, flowers, trees, and perhaps even garden gnomes. Indeed, through the lens of the anthropocene, the earth itself can be seen as an expanded garden, a space cultivated and contaminated by humans. But connecting the garden with the anthropocene is also a way to consider human actions and their impact on ‘nature’<sup>12</sup>, and nature’s response to human actions. It is also a way to consider the garden, or ‘nature’, beyond the human, and the notions of agency at play in such entangled networks.

The word ‘plot’ takes on multiple meanings here: it is at once a piece of land (a garden plot, an allotment plot, or even a smaller plot within a garden – the vegetable plot, for example); it is a scheme or plan for the future (it suggests a kind of secret or sneaky planning, originally in an unlawful or hostile sense, though contemporary use is not so negative); it is a storyline (in a literary, potentially dramatic sense, i.e. “the plot thickens...”); and finally it is the mapping out of something (usually a graphic representation of something on paper). In this context, it is a very clever use of the word: it implies conspiring for change, talking about land, creating stories and representing something in a material form. Together with the word ‘prophesies’, all of this is grounded in the notion of predicting what is to come based on what we know of the past and of our experience in the present. Together these words might suggest: land, plans and speculations.

There were five daily themes for the festival, which of course fed into and from one another in an organic process. Nevertheless, the structure was there to support these various themes, which were mostly implemented in specific parts of the daily schedule, so that flexibility remained for input on broader garden-radio related topics. It was the intention to think ecologically (holistically) and so I will go into some detail of the themes here as a way of exposing the broad range of

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<sup>11</sup> The festival was bilingual, but for this text I will focus on the English titles and themes.

<sup>12</sup> To Latour “nature is everything that is not human,” nature is equivalent to ‘matter’ (2017).

ways of thinking, talking, listening and creating with and about the garden, together with or on the radio; the scope of topics and their subsidiaries reflects the thematic diversity, which in itself aimed to echo the potential diversity within/of a radio garden.

The first day opened with *Hortus Politicus: The Political Garden*, which was an apt way to ground the festival firmly in its position in an allotment garden, including all of the politics that this entails. German allotment gardens are not anomalies in their precarious position within an urban setting and the desirability of the land for other (commercial) uses. This is probably the most obvious way that the garden colony setting connects to the political, but of course there were other equally important issues: gardens and forests are not always sites for earthly delight, but also enclosed sites of extraction and exploitation.<sup>13</sup> The opening day also wished to set the foundations for a festival which was to be inclusive – in this way to use ecological thinking – of a variety of perspectives in and of the garden. The community garden was discussed as a site for remembrance, for healing and kinship, as a site for the bringing together of marginalised communities, as a safe space. The reclaiming of power was established from the beginning by making space for predominantly female voices; it was an all-female team of presenters.

The second day's theme was *New Symbioses*. Symbiotic relationships between various organisms has been vital for plant and animal evolution, and this day dealt with recent trends in (human designed and initiated) symbiotic, sustainable food production, such as aquaponics and vertical gardening. With food production as its main thread, garden vegetables, communal growing, cooking and eating appeared as an offshoot, even including sound performances based around cooking. But space was also made for other important symbioses within a radio garden, or ecological setting. For example, in my show with Shanti Suki Osman, entitled *Hidden elements: reciprocal knowledges*, we looked at non-human agents within the garden and how they interact, learn from and evolve with and because of each other, as a form of symbiosis; how information is transmitted within non-

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<sup>13</sup>As such are they the antithesis of imperial botanical gardens? See also Donna Haraway on the Plantationocene and slave gardens (2016: 206n5).

human worlds, how attuned plants, insects and other organisms can be, that is often beyond our comprehension. This seemed a poignant place and medium with which to tell stories of barely-understood nonhuman communication through frequencies (of light, sound, and smell).

The middle day made space for *Biotopes in Future Perfect*. The biotope seems to hold a special place in German culture (where the term was initially coined), effort and space is made for it in the everyday as it has been consciously included in urban and rural planning – nature strips next to motorways, trees and hedges being left on farmland, and of course the garden (as a colony, as a backyard, as a community space) is a way to knit the biotope into the fabric of society. The biotope is an autonomous sphere which has potential to, and indeed benefits from connecting to other biotopes, thus forming a network. Many biotopes in this context are ‘artificial’ or human-made/designed, and a network of these can be seen to mimic the networks created by ‘artificial’ radio. The *Datscha Radio* project acted as an interconnected biotope within radio space, and a number of biotopes were also created within the biotope of the Datscha garden.<sup>14</sup> The notion of biotopes in a ‘perfect future’ seems almost absurdly utopian alongside the thought of our other (less-consciously made?) human biotopes: ever increasing landfill sites, techno/electro waste, gigantic islands of plastic. Indeed, are these ‘artificial nature biotopes’ a form of reparation for all the damage we have caused on earth? This festival day ruminated a variety of biotopes, and what they may look like in the future: what will grow out of these human-made biotopes in a post-human world?

Though the day of *Birds and Bees* was largely focussed on bees (discussions on urban bee hives and tales of beekeeping practices) and birds (the intricacies of their calls, their paths of migration, behavioural patterns and development), it was actually concerned with any non-human creature which resides in, passes through or simply enjoys the garden. Marek Brandt’s live concert *Music for Slugs* treated an unusual audience in the garden to some musical delights; it is part of his ongoing

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<sup>14</sup> Radio artist Marold Langer-Philippsen allowed himself to revel in the trance-like state of extended radio-making, crafting a site-specific radio biotope for his five consecutive hours on air.

series *Music for Animals*, in which he composes music specifically for the listening abilities of various species. Many responses to the open call, and indeed much musical material, centred around birds and bees, with their archetypal sounds of the urban garden. And it was also considered, how creatures (birds in particular) respond to the contemporary world, to anthropogenic noise and traffic pollution, for example. The guest stream (an hour dedicated to broadcasting a live stream from another location) that day came from New Zealand, where Sally Ann McIntyre, radio artist and expert on extinct bird species, played recorded sounds of birdsong that simply cannot be heard from the bird's beak any more...

The final day of the festival was *Subterranean Meditations: The Imaginary Garden*, and saw the studio move outside into the garden – toes in the earth, voices in the air. The theme for the day was threefold: slowing down, thinking about materialities, and imagining. As has already been described in this thesis, radio lends itself to the imaginary, and some would argue that the garden does too. This was a day centred around feeling grounded and letting the imagination wander at the same time. If the Anthropos is “forward looking, sky-gazing” (Haraway, 2016: 53), this was a day to let our attention wander down to the earth, to look beyond the green to the soil of the garden.<sup>15</sup> After the previous days' concentration on the anthropocene, it was important, to pay attention to the matter in and of the garden, and of course, with a larger framing in the back of our minds, the matter in and of and around the earth. In the radio garden, this was also a chance to consider the materiality of frequencies, which are active in the garden at all times. The activity of being grounded whilst imagining had the effect not only of slowing down, but of decelerating. In a current time of ever building velocity on seemingly all fronts, deceleration is not only pleasurable but necessary. Slowing down to the garden's pace helps us to notice many scales of pace, and to re-evaluate how we perceive at a human pace, how our sense of time(scale) differs from many in the garden. “Very, very slow changes humans identify as inanimate” (Buckminster Fuller 1970: 25).

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<sup>15</sup> See also how “Puig de la Bellacasa, ‘Ethical Doings in Naturecultures,’ discusses a transformational biopolitics, care of the earth and its many species, including people, through care of the soil in the permaculture movement” (via Haraway 2016: 169-170n3).

Rosanna Lovell and Gregor Kaspar facilitated (and broadcast) a *Garden Listening Session*, inspired by the practices of sound collective Ultra Red.<sup>16</sup> They played back recordings made in and around the garden, “seek[ing] to put the recording and its listeners into process by privileging the ear that hears over the sound recording itself” (Ultra-red 2011: 30) by collectively paying close attention to the details of the shared immediate surroundings, yet taking subjectivities into consideration. The day’s programming also slowed down to make space for radio features, for earthy creatures, for long, slow goodbyes from the Datscha garden.

### **(Context of Production:) the Great Outdoors**

Very often, the radio studio is a place of mystery. It is usually hidden within the depths of an institutional building, where one requires permission just to enter the main doors. In this way, it is removed, controlled, protected, sound-proofed, standardised and clinical. The ‘On Air’ sign is not a sign of invitation. On the contrary, it means “be quiet and stay out” – a warning similar to the almost historical red light on a photographer’s dark room door, cautioning that your entrance will ruin the creative process at hand. Datscha Radio tries something different.<sup>17</sup> For DR17, the studio was set up in the winter garden of an allotment garden house, and also sometimes underneath the trees within the garden itself. Guest artists and musicians often also picked a spot outside in which to set up their performances (here we saw DIY culture take form as compost bags were used as tables, for example!). In these settings, the studio was open, viewable, and vulnerable. The winter garden studio was surrounded by windows and nestled between the kitchen and the front door of the garden house. Visitors and participants literally had to walk through the studio to reach the bathroom, the kitchen, or anywhere inside. This setting – a ‘through-room cum studio’ – made it a hive of activity. Lacking the sound-proofing of a traditional radio studio, this activity was often included in broadcasts. When the studio moved outside, even

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<sup>16</sup> Ultra-red are an artist-activist sound art collective, which was initially formed in 1994 by HIV activists in Los Angeles and has expanded to include members elsewhere in the United States and Europe.

<sup>17</sup> When Datscha Radio takes the form of a temporary radio station, it always broadcasts from an ‘outdoor’ studio.



these windowed walls were removed and the studio was exposed to the sounds of the elements. There is a vulnerability to the kind of openness to (sound) exposure in this setting, and an openness to interruption; one never knows when a plate may be dropped in the kitchen, or a neighbour will start trimming the connecting hedge with an electric hedge trimmer. But these environmental sounds were an important inclusion in the aesthetic of the festival – an important factor in the sense of immersion that a listener could sense – and an on-going trace of the organic nature of its process. Through this kind of broadcast setup, it is possible to transmit something beyond broadcast content, it is possible to transmit an atmosphere: “It was enjoyable to hear live radio that was unmediated. When I was listening, it sounded sunny” (Lovell 2018).

### **(Back to another garden)**

Of course this is not the first project to question the institutionalised setting of traditional radio production or to move the studio outside, to challenge the established physical boundaries which radiation naturally overcomes. It would go amiss not to mention pirate radio of the seas<sup>18</sup> as a clear example of the removal of the radio studio from the physical context, on land, of the architecture of an institution, and also a removal from the legal usage of radio waves. There is a poeticism to the liberalisation of the radio waves within such an elemental context – on the waves of the seas – perhaps because it helps to reveal radio waves for what they actually are: a natural element. However, a particularly noteworthy example of garden radio from British radio history is the so-called “first outdoor broadcast” (Baird 2015), initiated by Beatrice Harrison in 1924, shortly after the inception of the BBC. Harrison was a cellist and noticed that when she practiced in her garden, the nightingales would join in, singing along with her music. She persuaded the BBC to organise the broadcast of a concert from her garden in Kent – a duet for cello and nightingale. The equipment necessary for this endeavor was complicated

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<sup>18</sup> Especially the famed sea-faring radio projects surrounding parts of Britain in the 1960s – Radio Caroline, et al. For a Canadian perspective, see *Islands of Resistance: Pirate Radio in Canada*, 2010.

and cumbersome (it took up a whole garden hut), quite the contrast to the technology that is necessary to be able to broadcast outside today.<sup>19</sup> But this is not the only interesting comparative in outdoor broadcasting between then and now; through a number of recreations of this historic broadcast event (to mark its 90 year anniversary in 2014), it became evident how ecological changes have led to the dwindling numbers of nightingales found in Europe, and how the rise in anthropogenic noise pollution has changed the sonic landscape. When Harrison played with the nightingales, it really was a duet that was to be heard; nowadays it would be a duet supplemented by permanent background noise. But the poetic nature of this collaboration between music, technology and nature remains just as poignant today. Nightingales are migratory birds, they travel like radio, their song transmits. The radio broadcasting of this ephemeral and fleeting opportunity points out the profundity that such live collective listening experiences can establish.

### **(Context of Distribution:) Hybridity and Scale**

Returning to the Datscha garden, let's look again at the modes of transmission: through online streaming (via the Datscha Radio website) and simultaneous transmission via FM micro transmitter, both analogue and digital modes are utilised. Through affiliations with 88vier – Berlin's 'creative radio station' which is co-run by a number of independent radio groups – the festival was additionally broadcast (most of the time) within Berlin and Potsdam both on their FM frequency and streamed online through their and a number of affiliated websites simultaneously. Although the outcome of broadcasting through this outlet also appears to fall into the dichotomy of analogue and digital, in actuality it is much more complexly intertwined: the signal is initially digitally *streamed* from whichever location the studio is set up in to the central transmitter, and from there it is re-streamed and broadcast via the FM transmitter. In this way, the outcome is

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<sup>19</sup> LapTopRadio is a practical example of how the scaling down of equipment can be beneficial: "LapTopRadio is a real nomadic radio: broadcasting irregularly on the internet with a most simple setting: a laptop with a modem connected to the mobile-phone network. If there is a mobile connection, we can broadcast. The old dream of independent pirate radio (but now on the internet) is coming true." [Laptopradio.org/about.html](http://Laptopradio.org/about.html) (01/06/2018).

actually a hybrid form of broadcasting. For me, analogue radio is conceptually important for the underlying themes of the festival, and the purist in me would have preferred to transmit on all possible analogue frequencies in order to be able to reach audiences both near and far in a mode which mimics more closely the physics of natural radio; through this an ecological framework would be strengthened. But for a low-budget project such as this one, it is simply not viable to pay the license fees necessary to transmit through such a variety of legal channels using strong frequencies,<sup>20</sup> and pirate radio was not feasible for a project of this duration. However, the hybrid digital-analogue method of transmission that was utilised echoed some of the concepts which were discussed throughout the festival and even revealed the necessity to step beyond essentialised dichotomising in our current age. Indeed, a festival on ‘the garden in the Anthropocene’ cannot take place without discussions of the hybridity of ‘nature’ (the organic?), human interaction and technology. And of course we cannot think of the Anthropos of our time and of the future without thinking of the hybrid nature of the cyborg, reflected in the blurring of boundaries since the 20<sup>th</sup> century which Donna Haraway explains in *The Cyborg Manifesto* (1984).

Technological hybridity was also vital for this project because it enabled the practice of transmission-reception to take place on an array of scales. Broadcasting in these various forms enabled listener access garden-wide (micro), city-wide (midi), and globally (macro). This is significant because it reinforces the value of thinking and playing with and on a variety of scales when considering the garden in an ecological framework. To consider the garden within the anthropocene, concepts of scale, in terms of space and time, must be dealt with. This was an important factor in the project as a whole, which manifested itself in a number of ways – most obviously in the space of transmission, but it was also dealt with in much of the content. The tiny, and often intimate, connections and communications within the garden were discussed alongside the potentially large-scale impact of their happening (or not happening) – as in pollination, for example.

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<sup>20</sup> Though Tetsuo Kogawa maintains in his *Micro Transmitter Manifesto* that strong signals are not ecological! (2002).

In this way, we not only recognise the variety of interconnected scales at play, but simultaneously realise the effect that they may have on each other.

With scale as an underlying theme, and the garden as the main location for consideration, it was thus studied on various levels – from the independent/personal back garden, allotment garden, cemetery garden, urban community gardens, cities’ communal green areas, sites of agriculture and extraction, to thinking of the green or land masses of our planet as a whole, and necessarily beyond these, to the non-green spaces of Brownfield sites and the Arctic. As a way to show the interconnectivity of various scales, the political aspects of the garden colony (its economic value as urban space) could be ‘scaled up’ in order to consider the political aspects of larger areas of green – rainforests, areas of deforestation and the effects therefrom. These issues of economic and political standing, based on the capital of land (or perhaps what is underneath that land – fossil fuels, precious metals, etc), are interrelated.

In terms of contributors, there was a wide scale of experience: many people already had experience with radio-making, sound art practices, garden culture or botany, but few had extended experience in all of these aspects. This was a levelling factor. Sound contributions came from near and far, people were remote and present, professional and amateur, local and ‘foreign’ – quite simply a spectrum.

The final form of hybridity that I would like to mention here is language. The programme endeavoured to be bilingual, in German and English. Here, German is the local language and English is (arguably) international. The scale of intended reception tries to mimic the scale of distribution, by providing accessibility on a local and international level. Perhaps it leaves a lot to be desired in terms of a ‘global reach’ by using only two languages, and English as a ‘world language’ is entirely problematic in terms of perpetuating a colonial past, but it is a solution for opening up accessibility – and there is no denying that the project is opened up to a more international audience this way. The effect of broadcasting in

two languages, as is graphically mirrored in the print documentation of the festival, is one of mimicry, sometimes friction,<sup>21</sup> but overall a harmonic hybridity.

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### **(An Interruption)**

“I made an effort to listen to the start of Datscha Radio 2017. The beginning of a new radio station, temporary or permanent, is a special moment that should have witnesses. It can also tell you a lot about what might follow. Datscha was exciting because it was live and from a specific location that was going to shape not just the programme but also the overall sound. Right from the start it became clear that the signal experienced dropouts, not regular enough to be predictable, but regular enough to expect them to carry on without any chance to remedy this fault. In other circumstances this would have led me to abandon listening, but not here. Firstly, Datscha Radio ran at a slow speed, garden speed or plant speed, so if you missed 10, 20 or 30 seconds, the chances were high that you could still follow what was going on without any problem. Secondly, the fall-back material was interesting, especially on the first day, when it contained a large variety of at times inappropriate field recordings. This was enjoyable, like a second channel that would break into the main programme at random moments. Except that they seemed to become less and less random to me. I remember vividly a situation on the first day, where a very didactic introduction to something started to annoy me and was promptly cut down by the sounds of chain saws from the fall-back channel. On other days, beautiful and tender moments, like e.g. Frieder Butzmann performing his Twitter Twitter Tirili poem or the extended interview with the queen of the night expert neighbour were spared any interruptions. Had the signal gremlin become my friend?

In terms of listening I think that radio offers easy switches between

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<sup>21</sup> Friction through interruption appeared and disappeared throughout the festival. Technical issues (internet connection) meant that the live signal erratically dropped and the fall-back signal would cut in. Interruption through the use of jingles (common even on temporary radio art stations such as Halle’s *Radio Revolten*, 2016, and Glasgow’s *Radiophrenia*, 2017) was non-existent; we played one jingle, one time over the entire festival, which had the sonic aesthetic of a field recording. This helped to slow radio down to a garden’s pace and we had birdsong as a constant reminder to our listeners of where we were broadcasting from.

For another take on friction, in terms of global interconnectedness, non-imperialist environmentalism, see Anna Tsing (2005).

active listening and the take-over by inner thought process in which listening becomes passive, a state of half-listening. Communication psychologists tell us that we cannot pay full attention to what somebody says for more than a few minutes, before drifting off. The same must be true for all but the most engrossing radio. With Datscha radio the random cuts between regular and fall-back programme acted for me like a kind of wake-up call, whenever I had followed my own thoughts and brought me back to listening to the radio. It was important that these were hard cuts and not fades, as this triggered a different mode of attention” (Aufermann 2018: email).

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### **(Contexts of Listening:) Expanded/Trans-Scalar Listening**

In her overview of Radio Art practice, Kersten Glandien (2000) mentions that a big difference in the listening experience of a sound art and a radio art work lies within the technology of reception, and specifically in the control of this. In most sound art works for installation or performance, the technological output of the sound is extremely controlled, whereas radio listening works quite to the contrary. Radio art producers (this concerns works for ‘traditional broadcast’, rather than radio art installation or other radio practices which may merge with sound art, and in which the output is controlled) have no control over how, where or on what device their audiences are listening and obviously that makes for a widely varied listening experience. Even the physical, architectural surroundings are not controlled in this situation, as they would be with sound performance or installation. With the variety of listening locations at play, background noise can also play a major role: “the sound environment generated by radio merges potentially with the sound environment at a given location” (Braun 1999: 5, via Glandien 2000). And this can be used to one’s advantage...

As previously mentioned, the background, or environmental sounds captured and broadcast from the Datscha garden/studio were aesthetically important, and also experientially. I was present for the duration of the festival, and for me some of the most deep and profound listening experiences took place at night, when the city and all of its noise began to sleep, and the intricate sounds of the garden came to the fore. Listening to the radio in the garden, there is then a kind of duet

which takes place, between the (especially live) broadcast and the sounds of the site of listening. This often creates a sense of serendipitous connectivity, a reminder of our physical presence within a space, a space which reveals its own physicality through sound. This layered listening experience can also provides a reminder that when listening to radio, we hear via technological electromagnetic frequencies which always take place at the same time as natural radio frequencies, which may fluctuate in their intensity, but are constant. This concept of the duality of cosmological and technological radio has been discussed throughout this thesis.

With consideration of this kind of listening experience in mind, the International Garden Radio Listening Club (InterGARLIC) was set up by Xenia Helms, of the DR17 team, specifically for this festival. Historically, Radio Listening Clubs (RLCs) were set up for communal listening when radio was still a very new medium for communication and most households did not own radio receivers; it made sense for people to gather and listen together (Schaffner/Helms 2017). These early collective listening activities were sociable experiences<sup>22</sup> – a form of leisure and entertainment on the one hand, and the provision of access to current political information (of utmost importance during wartime at the height of RLCs) on the other. There is also an argument for their value in creating a site for discussion and debate, and for the consideration of them as alternative public spheres.<sup>23</sup>

InterGARLIC arose out of the intention to make the listening experience more sociable and involved through the discussion of the content, but also as a way to connect with various international sites simultaneously through listening. DR17 audience members were invited to organise collective listening events in ‘green’/outdoor spaces, thus mirroring the site of production and transmission with the site of reception. Sounds from the site mingle with sounds from the transmission, reinforcing a sense of connectedness. Hiedi von Gunden (a

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<sup>22</sup> In the spirit of this thesis, I imagine the garden parties organised in order to listen to broadcasts of Beatrice Gibsons’s *Nightingale Concerts*, and the recognition of the significance of such live, layered, environment-specific, collective listening experiences.

<sup>23</sup> See *Radio listening clubs in Malawi as alternative public spheres* (Mhagama 2015).

musicologist who has written on the work of Pauline Oliveros, among others), writes of sonic awareness, describing “two ways of processing information, “attention and awareness”, or focal attention and global attention, which may be represented by a dot and a circle, respectively” (von Gunden 1980: 410). If a listener can take on this method of what could also be termed hybrid- or expanded-listening, it is possible to give attention to the site-specific sounds at a given location of listening, and also to the sounds of transmission. Within this dynamic, of blurring the boundaries between sites, there are also the sounds of the self, the internal sounds of consciousness at play;<sup>24</sup> paying attention to all of these facets together results in a trans-scalar listening experience.

## Expanded radio

Expanded Cinema is a relatively widely known term for cinema/cinematic experience which is often attributed to Gene Youngblood and his 1970 book of the same name.<sup>25</sup> It is an umbrella term for any screen-based or projected film or video work that moves away from either the constraints of classic plot, drama, linear narrative, or from the limitations of the typical viewer-screen dynamic of traditional film and video works. Working outside of these restrictions, artists often intended to express human consciousness (Youngblood 1970: 76) and thereby provide another experience of it for the audience: “When we say expanded

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<sup>24</sup> “When one is able through self training to flexibly direct one's attention with and understanding of expanded or global attention and of limited or focal attention both in sensing the outside world of sound and the inner world of imagination and memory, listening can be a multidimensional phenomena” (Oliveros 1990: xii).

<sup>25</sup> I cannot mention this book in the context of this essay without acknowledging the misogynistic standpoint that it comes from; Youngblood even describes and seems to condone an act of male brute force over female autonomy (361). It is yet another example of a cultural text which only references white male theorists and academics, predominantly white male artists, and the human subject – in its many iterations as artist, audience, sentient being – is exclusively masculinised and referred to as ‘he’. An article in *Playboy* magazine(!) is referenced to cite revolutionary scientific findings about the solar system. Despite this, it is an important text in the reconfiguration of cinema's capabilities, and indeed early articulations on the technosphere... so I will resist throwing the baby out with the bath water.



cinema, we actually mean expanded consciousness. [...] Expanded cinema isn't a movie at all: like life it's a process of becoming" (Youngblood 1970: 41).

Expanded Radio is a method of conceiving and facilitating radio listening practices that take the kind of listening described above into consideration. Some parallels can be drawn between expanded cinema and the more recent field of expanded radio; an openness to the rejection of linear narrative, to abstraction, but mainly to considerations of scale: "As with all Paleocybernetic phenomena, the direction is simultaneously toward inner and outer space, the microcosm and the macrocosm. On the one hand, intermedia environments turn the participant inward upon [themselves],<sup>26</sup> providing a matrix for psychic exploration, perceptual, sensorial, and intellectual awareness; on the other hand technology has advanced to the point at which the whole earth itself becomes the 'content' of aesthetic activity" (Youngblood 1970: 348). What is being described here, is very much like von Gunden's concept of sonic awareness – attention and awareness, the dot and the circle. Youngblood cites works which aim to visualise the ironic or unlikely parallels between the subatomic and the cosmological. He also suggests that the field of expanded cinema could, should, or will be expanded further to include massive-scale light shows, in the form of fake aurora, for example: "Clouds of barium atoms released by rockets at high altitudes are ionized by solar radiation. They then interact with electromagnetic force fields around the earth. Several artists have proposed similar projects to generate hemispherical lumia displays" (Youngblood 1970: 444).

But because radio is based upon, or initially stems from a natural phenomena – electromagnetic radiation – "and most of the energy sources on which human life is based consist of stored or pure forms of electromagnetic radiation" (Silverstrin 2016: 30), the connection between the microcosm (inward, internal, perception, and the immediate surroundings) and macrocosm (the larger world of frequencies) becomes a connection between radio, listener and trans-scalar environments; paying attention to this dynamic is trans-scalar listening in action, it is ecological

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<sup>26</sup> My neutralisation.

thinking.<sup>27</sup> Ecological thinking and trans-scalar listening through expanded radio art are potent and effective methods of communication and connection.

**(In conclusion) Putting the garden to sleep.<sup>28</sup>**

Datscha Radio<sup>17</sup> brought together, examined and experimented with many disparate and connected facets of radio and garden. In opening up these two fields simultaneously, certain structures, methods and practices were questioned, decentralised and creatively re-purposed. Participants and listeners were encouraged to collectively expand notions of the two ‘genres’, thereby creating space for knowledge -making and -sharing practices and exchanges. Importance was placed on the vulnerable studio, which gained strength from its vulnerability by being open to infiltration both from the elements, but just as importantly, from people; here could be an example of what Westerkamp calls radio that listens (1994).

Through expanding practices of radio-making, and expanding practices of listening, the surrounding environmental soundscape was able to feed back through radio into other listening spaces, thus creating a work that was self-reflexive on multiple levels, and that allowed for trans-scalar encounters. A temporary radio project inherently reveals the temporary networks of makers and listeners involved, which in turn mimics such networks at play in the garden, and, indeed, in ecology at large. This project is an example of how radio art can effectively be used as a platform for exploring human and nonhuman relationships to ‘nature’ (matter) in times of great change.

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<sup>27</sup> Youngblood also draws attention to the connection between expanded cinema and ecology; a chapter in his book is even entitled *The Artist as Ecologist* (1970).

<sup>28</sup> A term used by my mother to describe the work done at the end of the gardening season.

## Concluding remarks

This thesis has begun the groundwork of positioning radio art securely within the landscape of the arts, specifically as a simultaneously political and artistic medium which brings about an awareness of interconnectivity. I began this work by referencing Wai Chee Dimock's "Context in Literary Studies" (2003), in order to demonstrate how the expansion of possible frameworks is being regarded as necessary in various fields of study. The questioning of perspective is also a facet of what I consider to be the most fruitful discussions of the anthropocene; it helps to shift discourses away from the anthropos, to a standpoint which embraces ecological thinking. As I have discussed throughout this work, expanding notions of radio in a similar way is an effective device for revealing multispecies, trans-scalar interconnectivity on a simultaneously organic and technological level.

Many dominant discussions of the anthropocene alternate between two extremes of scale, thereby entrenching a form of apathy. In response to this, my work intends to strengthen what I have shown to be constructive notions of the trans-scalar (Horton 2017). To recognise trans-scalar encounters is to acknowledge fluxes of influence regardless of the size of their scale. Essentially: small gestures can have large repercussions, and vice versa. In times of ecological crises, this is imperative to keep in mind.

This thesis adds to current discourses within the emerging fields of radio art and the anthropocene by positing the obligation to expand practices of listening as a way to pay attention to, and foster care and respect for, the voices, sounds and gestures which often go unnoticed. Expanding (re)articulations of history is also a method of achieving this which I have suggested here. Through the analysis and contextualisation of the radio art work *chorus duet for radio* (Donovan 2016) and garden radio art project *Datscha Radio*<sup>17</sup> (Schaffner 2017), I have shown how artistic practice can make space for the realization of trans-scalar encounters through collective listening.

Taking seriously Haraway's statement "it matters which stories tell stories"(2016), I recognise that although many of my references work towards a feminist, queer, ecological and postcolonial project, additional research into the

interconnected fields of radio, ecology and the anthropocene necessitates a further diversification of source material. I consider this project to be ecological and political; moving intentionally beyond anthropocentrism would be a vital step in pursuing it further. Important groundwork for this, I believe, would be to make efforts to decolonialise and indigenise the fields of the anthropocene and radio, both of which at their roots are intertwined with colonialism. This shift away from violent, domineering and oppressive methods is an essential part of “becoming with” (Haraway 2016) in times of great upheaval. Making space for indigenous perspectives of ecological thinking, multispecies interconnectivity and the trans-scalar is vital in this respect.

Another strand in the shift away from anthropocentrism would be to further research more-than-human networks of communication, the outcomes of which could be enmeshed quite beautifully within the transmission networks of radio art.

The essence of this text is about expanding concepts of radio in order to consider the potential of radio art for collective, trans-scalar listening encounters. Furthermore, any future research stemming from it would instinctively lay credence on the act, the politics, and practices of listening, which are necessary in many fields and on many scales, in order to create sustainable multi-species interdependences in times of ecological uncertainty.

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## Images

Fig.1.1: Sky and Ground Wave:

<https://en.wikipedia.org/wiki/File:Groundandskywave.jpg>

Fig.1.2: *Multispecies Cat's Cradle*. Drawing by Nasser Mufti, 2011.

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## Deutsche Zusammenfassung

Die vorliegende Masterarbeit untersucht einige der Diskurse, die aus den gegenwärtigen ökologischen Krisen erwachsen sind (Haraway 2016; Horton 2017), und begreift Radiokunst als eine konstruktive Methode, Praktiken des Zuhörens zu kreieren und neue Wege jenseits anthropozentrischer Dialoge und der Beschränkungen herkömmlichen Geschichtenerzählens zu öffnen.

Die Gedanken aus „Ecological Thinking“ (Code 2006) und die Konzepte von „Planetary Time“ (Dimock 2003) bilden einen nützlichen Rahmen für die Untersuchung zeitgenössischer Radiopraktiken. Beide Werke eröffneten am Beginn des 21. Jahrhunderts neue Perspektiven, indem sie die ausgedehnten, komplexen Netzwerke der Interkonnektivität nicht nur in der Natur verorten, sondern ihre Relevanz auch zwischen Lebewesen, Technologie und Umwelt behaupten. Um diese Interkonnektivität von Radio und Übertragung genau zu identifizieren sowie ihre inhärenten Möglichkeiten über Inhalte hinaus auch in die Prozesse des Mediums selbst vertiefen zu können, soll der Notwendigkeit eines ökologischen (ganzheitlichen) Denkens Rechnung getragen werden, das nachhaltige Symbiosen zwischen Menschen, Technologie und den lebenden und ‚nicht-lebenden‘ Entitäten des Planeten zu fördern vermag.

Meine Masterarbeit beginnt mit einem Überblick über die aktuellen mit Radio- und Radiokunstpraktiken verknüpften anthropozänen Diskurse. Im Folgenden beschreibe und kontextualisiere ich das Radiokunstwerk *chorus duet for radio* (Donovan 2016) und positioniere es als ein Beispiel für eine kollektive transskalare Hörbegegnung. Weiterhin wird nachgewiesen, wie das Medium Radio als wertvolles Mittel eingesetzt werden kann, um vermännlichte und verwestlichte (Radio-) Erzählstile zu kritisieren und zu durchkreuzen und neue Funktionen zu übernehmen, etwa als Ventil für feministische, queere und spekulative Neu-Erzählungen der Vergangenheit. Geschichte wird hier wie elektromagnetische Strahlung betrachtet: als Materie, die geklärt werden soll. Abschließend werde ich am Beispiel des Gartenradio-Kunstprojekts *Datscha Radio17* (Schaffner

2017) in mehreren Punkten demonstrieren, wie Radio vielschichtiger eingesetzt werden kann, um eine Vielzahl der mit dieser Arbeit verbundenen Themen zu untersuchen: Anthropozän, Radiokunst, Ökologie, menschliche und nicht-menschliche Netzwerke, Praktiken des Zuhörens, spekulatives Erzählen und alternative Strategien der Durchkreuzung.

Im Wesentlichen untersucht diese Masterarbeit, inwieweit ein „erweitertes“ (expanded) Radio in seinen Eigenschaften als Naturphänomen, als technologisches und als künstlerisches Medium als Hort des Widerstands in Zeiten globalen Wandels genutzt werden kann.

## Erklärung

Hiermit erkläre ich, Katie Donovan, dass ich diese Masterarbeit eingeständig verfasst, noch nicht bereits zu anderen Prüfungszwecken vorgelegt habe, keine anderen als die angegebenen Quellen und Hilfsmittel verwendet sowie wörtliche und sinngemäße Zitate als solche gekennzeichnet habe.

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